

MANUFACTURERS' RECORD

A WEEKLY REVIEW OF THE IRON, STEEL, METAL & HARDWARE TRADES.

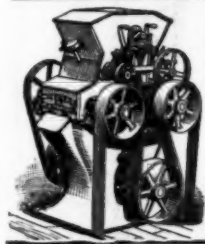
AND A MANUFACTURING AND TEXTILE PAPER, DEVOTED TO THE UPBUILDING OF SOUTHERN MANUFACTURES AND THE DEVELOPMENT OF THE MATERIAL RESOURCES OF THE SOUTH.

VOL. 8. No. 16.
WEEKLY.

BALTIMORE, NOVEMBER 28, 1885.

\$3.00 PER ANNUM.
SINGLE COPIES, 10 CENTS.

—MANUFACTURERS OF— **JAS. SMITH & CO.** —DEALERS IN—
CARD CLOTHING Works, 413 to 421 Race St., Cor. of Crown. **Manufacturers' & Mill Supplies**
Of Every Description. **COTTON and WOOLEN MACHINERY.** Office & Store, 137 Market St., Philadelphia. Of Every Description.



Milling Outfits for Flour and Meal.

WE MAKE ROLLS AND PORTABLE MILLS COMPLETE.

Manufactory Established in 1851.

Pamphlets with Prices Mailed Free.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.



ELEVATORS

Send for Illustrated Circular

MORSE ELEVATOR WORKS.

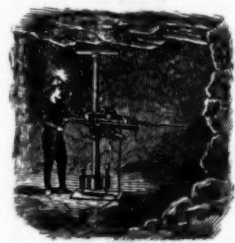
MORSE, WILLIAMS & CO. Successors to CLEM & MORSE

Manufacturers and Builders of HYDRAULIC STEAM, BELT and Hand-Power, PASSENGER and FREIGHT **ELEVATORS** With most approved Safety Devices. Dumb-Waiters, Automatic Hatch-Doors, &c.

Office: 411 CHERRY STREET,

Works: FRANKFORD AVE., WILDEY & SHACKANAXON STS. PHILADELPHIA, PA.

Branch Office, 108 Liberty Street, NEW YORK.



"ECLIPSE"

"STRAIGHT LINE"

ROCK DRILLS, AIR COMPRESSORS,

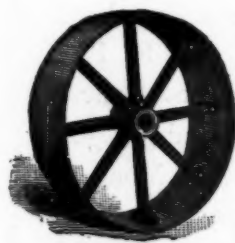
Machinery for Tunneling, Grading, Mining, Quarrying, etc.

TEN COMPLETE TUNNELING PLANTS FURNISHED FOR SOUTH PENNA. RAILROAD, PA.

FOR CATALOGUES, ESTIMATES, &c., ADDRESS,

INGERSOLL ROCK DRILL CO., 10 Park Place, N. Y.

MORTON, REED & CO., Agents, Baltimore.



THE MEDART PATENT WROUGHT RIM PULLEY.

OVER 300,000 NOW IN USE. THE LIGHTEST, STRONGEST, BEST BALANCED and CHEAPEST in the WORLD.

Whole Pulleys from 9 inches to 120 inches diameter. Split Pulleys from 12 inches to 120 inches diameter. All widths of face up to 36 inches, crowning or straight, with single, double or triple sets of arms. Also Tight and Loose Pulleys. Absolute satisfaction guaranteed.

SHAFTING, HANGERS, COUPLINGS, &c.

MEDART PATENT PULLEY CO., 1906 TO 1914 N. MAIN STREET, ST. LOUIS, MO. Stores: 99 to 101 W. Second St., Cincinnati. 24 & 26 S. Canal St., Chicago.

J. A. J. SHULTZ, President.

B. C. ALVORD, Secretary

SHULTZ BELTING COMPANY, ST. LOUIS, MO.

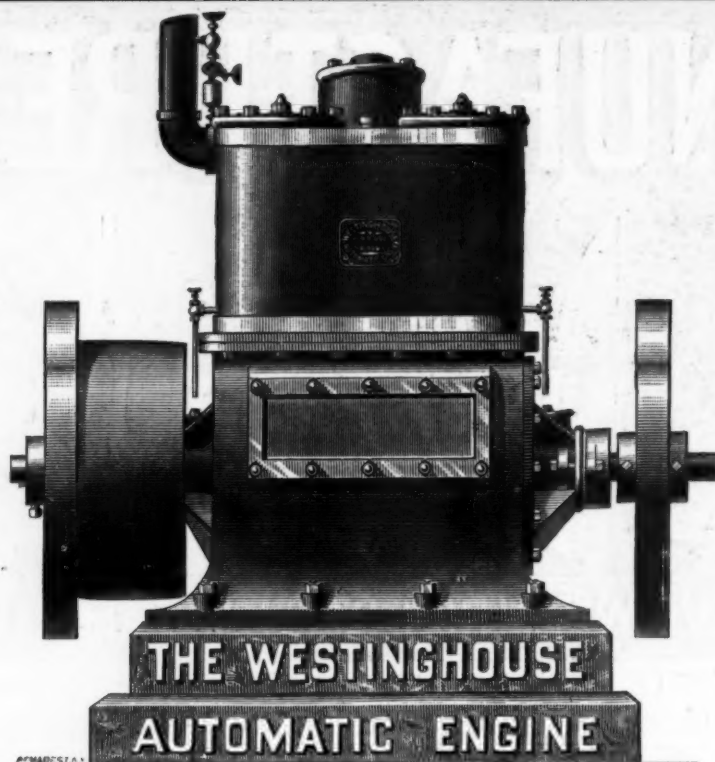
Manufacturers of Shultz Patent Fulled Leather Belting, Lace and Picker Leather.

OUR BELTING is made of Leather, tanned on the surfaces only; the interior (which is the fibre and strength of the hide) is not tanned, but Rawhide fulled and softened by our patent process. Our belting is more pliable, and hugs the pulley better and transmits more power than any other Belt. It does not pull out at the laccholes or rivets. It stretches less than any other Belt. It works equally well for the largest Driving Belts or for the fastest running machinery and smallest pulleys. OUR LACE LEATHER is made of Rawhide, by our patent process, without any tanning and is stronger and will wear better than any other. WE ALSO MAKE THE BEST PICKER LEATHER AND BELT GREASE IN THE COUNTRY. Satisfaction guaranteed.

Southern Agents—FRED. N. OGDEN, New Orleans, La.

J. H. COFFIN & CO., Memphis, Tenn.

J. L. LINDSAY, Richmond, Va.



INTENDING PURCHASERS will not fail to note the unsparing and unanimous condemnation which the **WESTINGHOUSE ENGINE** receives—from its competitors. To the thinking man, this is significant, and doubtless has much to do with the creation of our counter argument which we append below. Very respectfully,

WESTINGHOUSE MACHINE CO.

PITTSBURGH, PA.

SALES FOR OCTOBER, 1885.

58 ENGINES, AGGREGATING 2,055 HORSE-POWER, DISTRIBUTED AS FOLLOWS:

1 of 125 Horse-Power.	2 of 45 Horse-Power.	3 of 15 Horse-Power.
1 " 100 "	7 " 40 "	1 " 12 "
3 " 75 "	7 " 35 "	3 " 10 "
1 " 65 "	6 " 30 "	3 " 8 "
4 " 60 "	3 " 25 "	3 " 5 "
4 " 50 "	5 " 20 "	1 " 4 "

Of these, 7 were second orders; 2 were third orders; 1 was a fifth order; 1 was a fourteenth order; 1 was a fifteenth order. Total, 12 repeated orders (23 per cent. of sales) from actual users.

SALES DEPARTMENT CONDUCTED BY

WESTINGHOUSE, CHURCH, KERR & CO.....	17 Cortlandt Street, New York.
FAIRBANKS, MORSE & CO.....	Chicago, Cincinnati, Cleveland, Louisville and St. Paul.
FAIRBANKS & CO.....	St. Louis, Indianapolis and Denver.
PARKE & LACY.....	San Francisco, and Portland, Oregon.
PARKE, LACY & CO.....	Salt Lake City, Utah and Butte, Montana.
D. A. TOMPKINS & CO.....	Charlotte, N. C.
KEATING IMPLEMENT & MACHINE CO.....	Dallas, Texas.
ROBERT MIDDLETON.....	Mobile, Ala.
H. DUDLEY COLEMAN.....	New Orleans, La.
IMRAY & CO.....	Sidney and Melbourne, Australia.
R. ROGERS.....	43 Rue Lafitte, Paris.
F. E. AVERILL.....	Delft, Holland.
TOMAS G. FOLEY & CO.....	Buenos Ayres, S. A.

THE WHITIN MACHINE WORKS,

J. LASSELL, President and Treasurer.

G. E. TAFT, Agent.

H. ELLIS, Superintendent.

— MANUFACTURERS OF —

COTTON MACHINERY

— Openers, * Lappers, * Cards, —

Railway Heads, Drawing,

RING SPINNING, SPOOLERS, WET and DRY TWISTERS,

REELS,

— WARPERS, * DRESSERS, * LOOMS, * &C. —

— Whitinsville, Worcester County, Mass. —

SACO WATER-POWER MACHINE SHOP,

— BIDDEFORD, MAINE, —

Manufacturers of

COTTON * MACHINERY

OF THE MOST IMPROVED PATTERNS.

CARDS,

Cylinders, 36x36 and 36x30, with 20 tops and Self-Strippers and Railway Troughs. Union Cards, with workers, strippers and tops.

FINISHER RAILWAY HEADS.

DRAWING FRAMES, ANY LENGTH, WITH 3, 4 AND 5 LINES OF STEEL ROLLERS.

English Slubbers and Fly Frames, With Long or Short Bolsters.

— BOBBINS — 12x6, 11x5½, 10x5, 9x4½, 8x4, 7x3½, 6x3, and 5x2½.

RING SPINNING FRAMES, 2, 1½, 1¼ AND 1½ INCH RINGS.

— TWISTERS. —

SELF-ACTING MULES, Parr, Sharp and Roberts' and Higgins' Pattern,

14, 15-16, and 14-inch Gauge.

S. W. RICHARDSON, Treasurer,

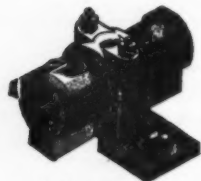
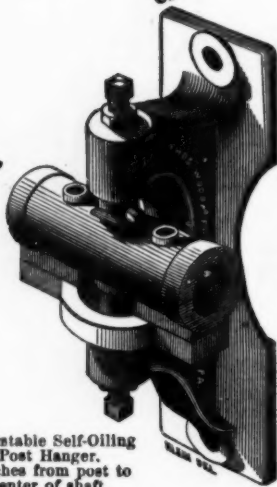
No. 1 Simmons Building, Boston.

JAS. H. McMULLAN, Agent,

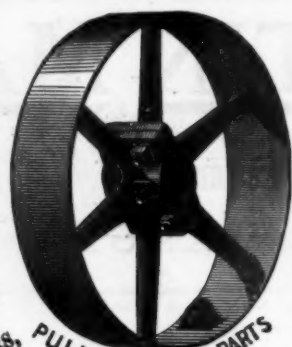
Biddeford, Maine.



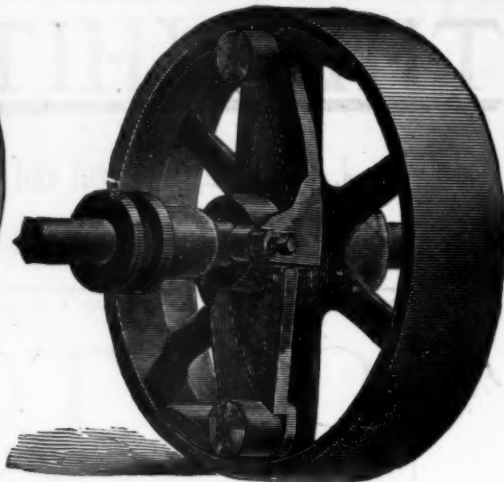
ADJUSTABLE SELF-OILING HANGER.

Ball and Socket
Self-Oiling Pillow Block.DOUBLE-BRACED ADJUSTABLE
SELF OILING HANGER.Adjustable Self-Oiling
Post Hanger.
6 inches from post to
center of shaft.

FAIRMOUNT MACHINE WORKS.
Office, 2106 Wood St., Philadelphia.
THOMAS WOOD,
Manufacturer of Specialties
Power Looms, Patent Bobbin or Gull
Winding Machines, Plain and Presser
Beaming Machines, Dyeing, Reeling,
or Spooling Machines, Sewing,
Warp Spinning, Filling and Cal-
endering Machines,
WARPING MILLS,
16, 18 and 20 yards Circumference,
WITH IMPROVED BECKS.
SHAFTING,
With Patent
ADJUSTABLE SELF-OILING HANGERS, PULLEY IN TWO PARTS
8, 10, 12, 15, 18, 20, 24 and 30 in. drop.
Also WALL, POST AND GIRDER HANGERS.
Pulleys, from 4 inches to 10 feet in diameter.
PATENT FRICTION PULLEY.
Pulleys in two parts, any size required.
PATENT HOISTING MACHINES.
Oil Presses for Lard, Fish and Paraffine.



PULLEY IN TWO PARTS

**PATENT FRICTION PULLEY.**

Simple, reliable and very durable.
Suitable for any kind of driving, they
serve equally well as driver or driven.

Special Driving,
such as Angular, Muley, and Gallows Driving,
furnished for any position
where possible to transmit power by belts.
PULLEYS from 4 inches to 10 feet in diameter.

Why use old style Bearings, that require oiling
every day, when you can get Bearings at less cost
that only require oiling once in Six Months, and
thus save oil and labor enough to pay for the bear-
ings in use. Test the matter for yourselves; a
trial always secures the trade.

ADDRESS.

THOS. WOOD,

Office, 2106 Wood St.

PHILADELPHIA, PENNA., U. S. A.

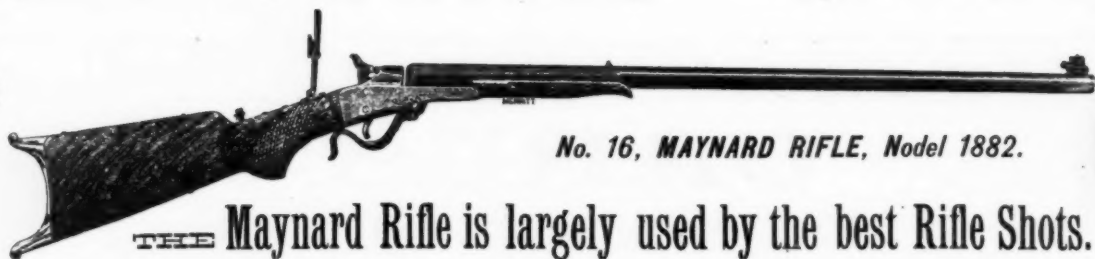


THE MAYNARD RIFLE

In all Calibres from 22 to 50.

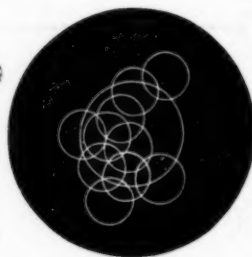
Unequalled for Compactness and Portability. Unsurpassed for Accuracy.

Our Stock takes Rifle
Barrels of different
Calibres, and a
Shot Barrel.

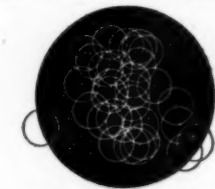


No. 16, MAYNARD RIFLE, Model 1882.

THE Maynard Rifle is largely used by the best Rifle Shots.



TEN CONSECUTIVE SHOTS,
100 yards, with a MAYNARD
RIFLE, 28 inch, .32 calibre, 35
grains of powder, with a
patched bullet of 165 grains.



THIRTY CONSECUTIVE SHOTS,
75 ft. off-hand, with a MAY-
NARD RIFLE, 23 calibre. By
H. G. BIXBY, Nashua, N. H.



At the Spring Meeting of the Lawrence (Mass.) Rifle Club, May 30, 1885, Mr. E. F. RICHARDSON, with a Maynard Rifle, made 27 consecutive bull's eyes, at a distance of 200 yards, off-hand, on a paper target. On July 11, 1885, he scored 31 consecutive bull's eyes under the same conditions. These scores are the best on record.
On May 9, 1885, Mr. W. H. TAFT, of Brattleboro', Vt., made in a regular match, with a Maynard Rifle, at 200 yards distance, off-hand, 117 out of a possible 120, on the Massachusetts Paper Target, a score which has never been excelled.
Inside of a ring $3\frac{1}{4}$ inch diameter, Mr. C. H. BROWN, of Fitchburg, Mass., in a regular match at Walnut Hill Range, July 5th, 1884, at a distance of 200 yards, with a Maynard Rifle, placed 7 consecutive shots.

SEND FOR CATALOGUE

MASSACHUSETTS ARMS CO., Chicopee Falls, Mass.

HOWARD & BULLOUGH, & RILEY,

BUILDERS AND IMPORTERS OF

COTTON MACHINERY.

Wool, Worsted and Flax Machinery and English Card Clothing. Hardened and Tempered Steel Wire a Specialty.
MILL ENGINEERS. No. 19 PEARL STREET, BOSTON, MASS.

GREAT SUCCESS OF OUR
PATENT ELECTRIC STOP-MOTION,

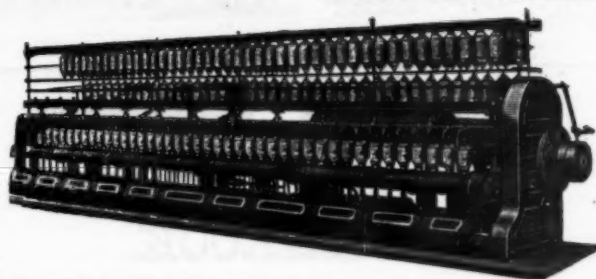
ALREADY APPLIED TO OVER
10,000 DELIVERY HEADS OF DRAWING, AND
71,000 INTERMEDIATE ROVING SPINDLES.

The quality of Sliver produced by our Frames surpasses all others, and Waste, Single and Roller Laps are prevented, and production increased.

Correspondence Solicited.

Send for Circulars.

SLUBBING AND ROVING FRAMES WITH LATEST AND BEST IMPROVEMENTS.



SPECIALTIES:
EXHAUST OPENERS, LAPPERS, (LORD'S
EVENERS,) IMPROVED ROLLER CARDS,
PRODUCE MORE AND MAKE LESS
WASTE THAN ANY OTHER.

7,000 SELF-STOPPING WARPERS,
Already working with latest improvements.

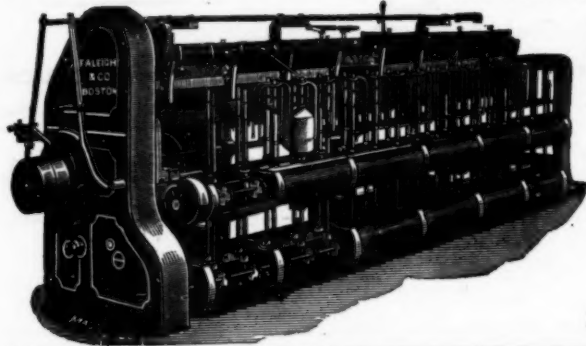
800 CYLINDER SLASHERS
Now at work in America alone

Patent and plain Spindle, Spinning and Twisting Frames,
Spoolers, Reels and Circular Warpings, Cloth Folders, Size Kettles
plain and Fancy Looms, Spindles, Flyers and Fluted Rolls.

F. A. LEIGH & CO.

Importers of Mill Machinery,

—No. 40 WATER STREET, BOSTON, MASS.—



Openers, * Lappers, * Cards, * Drawing,
Slubbing and Roving Frames,
CARD CLOTHING, ETC.

Correspondence Solicited.

Send for Circulars.



GANDY'S PATENT MACHINE BELTING

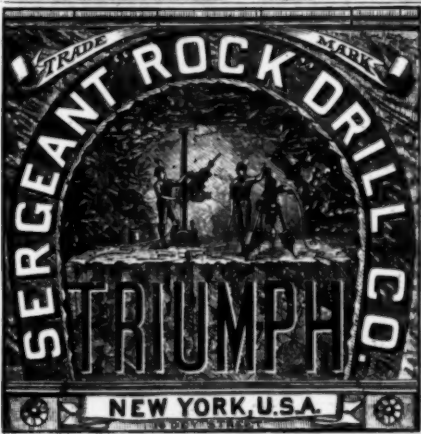
GOLD MEDAL AWARDED NEW ORLEANS, 1885, FOR BEST RUNNING BELTS.

Made PERFECTLY Straight and any Length without Joints.

For Main Driving it is the Best. Much Cheaper Than Leather.

MANUFACTURED BY

THE GANDY BELTING CO., BALTIMORE, MD.



THE "TRIUMPH" ROCK DRILL

and NORWALK AIR COMPRESSOR

Are the Latest and Most Improved Machines that were ever designed for the work required of them. They are the Most Simple, Economical and Effective now known, and will satisfy all Purchasers.

Boilers, Steam Pumps, Hoisting Engines, Pipe and Fittings, Electric

Blasting Apparatus, Powder, Caps and Fuse, Steam and Air Hose, Wire Rope,

—And General Mining and Contractors' Supplies.—

Complete Specifications for Rock Drilling and Mining Plants Furnished on Application.

SERGEANT DRILL CO., 16 Dey Street, New York, U. S. A.

WHITINSVILLE SPINNING RING CO.

WHITINSVILLE, MASS., U. S. A.

SUPERIOR WORKMANSHIP.

NOT EXCELLED IN DURABILITY.

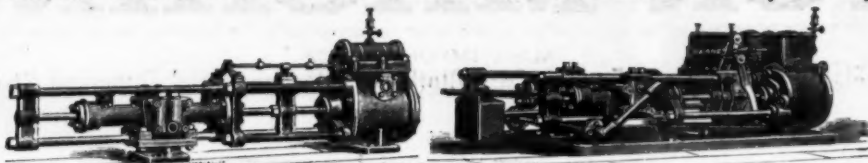
EVERY RING WARRANTED.



THE DEANE STEAM PUMP CO., HOLYOKE, MASS.

Builders of STEAM AND POWER PUMPING MACHINERY of Every Variety.

Hydraulic Pressure
* **PUMPS** *
A Specialty.
SINGLE OR DUPLEX PATTERN.



Warerooms:
Boston, New York,
Philadelphia,
Chicago, St. Louis.
SEND FOR CATALOGUE No. 22.

HELL GATE

— BLOWN UP WITH —

240,000 Pounds of RACKAROCK.

Safer than any other High Explosive. Stronger than No. 1 Dynamite, and Cheaper. For Circulars address

RENDROCK POWDER CO., 23 Park Place, N. Y.

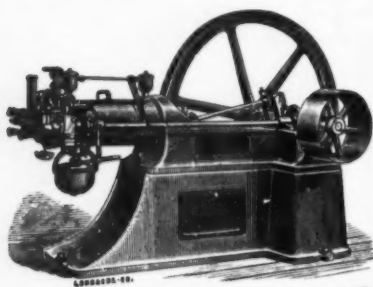
Rand Drills.

Every Hole for the great blast at FLOOD ROCK was drilled with the

RAND DRILLS.

RAND DRILL CO.

23 PARK PLACE, N. Y.



Over 14,000 in Use.

Otto Gas Engine

20 to 70 per cent. less Gas consumption than ANY other ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

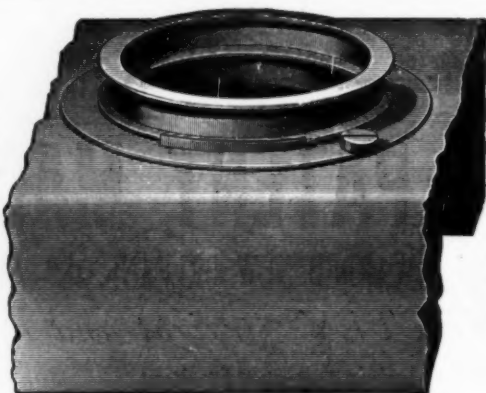
No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by insurance companies. UNRIVALLED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes: 1 to 25-horse power.

Branch Office, 214 Randolph St., Chicago. SCHLEICHER, SCHUMM & CO., N. E. cor. 33d and Walnut Sts., Philadelphia.

DOUBLE ADJUSTABLE Spinning Rings.

GEORGE DRAPER & SONS,
HOPE DALE, MASS.

TELEGRAPH ADDRESS AND RAILROAD STATION,
MILFORD, MASS.



	Number of Rings sold.	Number of Rings sold for repairs.
1869.....	6,025.....	
1870.....	20,258.....	
1871.....	38,648.....	
1872.....	94,264.....	12
1873.....	117,301.....	
1874.....	168,322.....	500
1875.....	223,924.....	563
1876.....	185,319.....	547
1877.....	270,812.....	946
1878.....	215,214.....	3,309
1879.....	336,918.....	8,007
1880.....	567,860.....	11,264
1881.....	659,730.....	8,974
1882.....	636,715.....	22,515
1883.....	416,500.....	21,689
1884.....	310,860.....	25,105
1885, 9 mos. 212,056.....	22,373	
Total num-ber sold.....	4,429,794	126,604
Total number in use 4,363,190.		

The great durability of our Rings is shown by the fact that we have more rings in use over twelve years old than all we have sold for repairs.

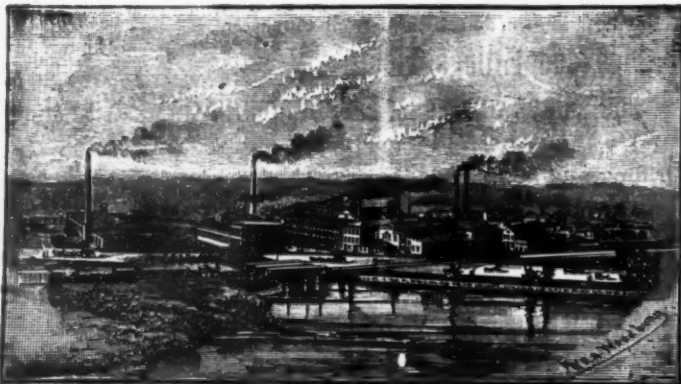
This statement shows unmistakably that a mill once supplied with our rings need think but little of the cost of repairs. As the number sold for repairs is an average of about twenty per cent. of the number sold the tenth year before, the average life of our rings will be at least twelve years.

Do not make the mistake of ordering new frames without specifying Double and Adjustable Rings. While they cost more to begin with, they are much the cheapest in the end, on account of their uniform excellent quality and unparalleled durability.

As an encouragement to use none but the best of Rings, we reduced the price on and after the first day of January, 1885, of those 1 1/4 inches or less in diameter, without holders and screws, to be used only to take the place of our rings worn out, to 12 cents each.

Washburn & Moen Manufacturing Co., Worcester, Mass.

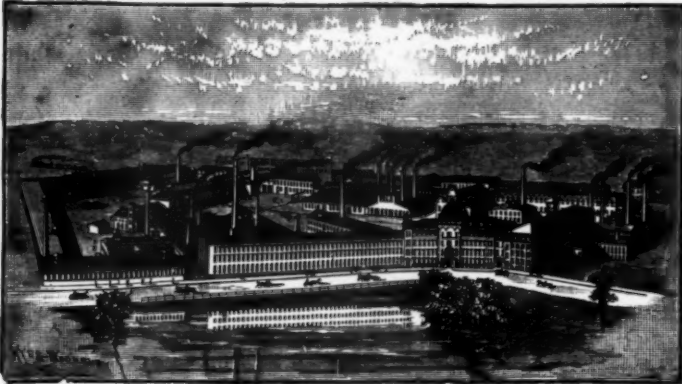
Wire Drawers, and Manufacturers of Iron and Steel Wire of Every Description.



Iron and Steel Telegraph and Telephone Wire.

Patent Steel Wire Bale Ties, Pump Chains, Chain Wire, Steel Wire for Springs, Needles and Drills, Watch Main Springs.

Send for Price-Lists, Circulars and Descriptive Pamphlets on Our Specialties.



NEW YORK WAREHOUSE:
21 Cliff Street,
New York City.

GLIDDEN PATENT

STEEL BARB WIRE.

The Best Fence Material in Use.

For Sale by Special Agents and Hardware

Proof against Fire, Wind and Flood.

Dealers in all Parts of the United States.

CHICAGO WAREHOUSE:
107 Lake Street,
Chicago, Illinois.

BALTIMORE Manufacturers' Record.

Published Every Saturday by
BIGSBY & EDMONDS.

J. E. Edmonds. J. W. Bigsby. Wm. H. Edmonds.

R. H. EDMONDS, EDITOR.

—OFFICE—

71 and 73 Exchange Place, Cor. Commerce St.

—BALTIMORE—

NEW YORK BRANCH OFFICE:

Room 8, No. 118 Fulton Street,

J. W. BIGSBY, Resident Partner.

—SOUTHERN OFFICE, ATLANTA, GA.—

I. W. AVERY, Manager.

Price of Subscription Per Year in Advance:

(POSTAGE INCLUDED.)

TO UNITED STATES AND CANADA, \$3.00
OTHER COUNTRIES, - - - 4.50

ADVERTISING RATES:

One square (14 lines Agate, 1 inch) 1 time... \$1.50
" " " " " 2 " " " " " 3.00
" " " " " 3 " " " " " 4.50
" " " " " 4 " " " " " 6.00
" " " " " 5 " " " " " 7.50
" " " " " 6 " " " " " 9.00
" " " " " 7 " " " " " 10.50
" " " " " 8 " " " " " 12.00
" " " " " 9 " " " " " 13.50
" " " " " 10 " " " " " 15.00
" " " " " 11 " " " " " 16.50
" " " " " 12 " " " " " 18.00
" " " " " 13 " " " " " 19.50
" " " " " 14 " " " " " 21.00
" " " " " 15 " " " " " 22.50
" " " " " 16 " " " " " 24.00
" " " " " 17 " " " " " 25.50
" " " " " 18 " " " " " 27.00
" " " " " 19 " " " " " 28.50
" " " " " 20 " " " " " 30.00
For advertising on outside pages add 50 per cent. to the above rates.
Reading Notices 50 cents per line each insertion.

BALTIMORE, NOVEMBER 28, 1885.

Gold Mining in Georgia.

The main gold-mining region of Georgia is in Lumpkin county, and the surrounding country, and there is a town there whose streets are literally paved with gold. This place is Dahlonega. All the hills and valleys around Dahlonega are filled with the precious metal, and the town itself is located on one of the richest of them all. It is said by those who are posted that a line from the public square would strike down directly into one of the richest deposits in the celebrated Pigeon Roost belt and passes directly under the town, and the temptation to dig down into it is tantalizing to the old miners. The grounds of the public square are a peculiar formation of brickbat and slate which accompanies this belt, and rich veins of gold crop out upon the surface, and valuable nuggets are washed up by heavy showers. Many valuable ones, which have been picked up by different parties, may be seen at any time.

All the surrounding hills have been yielding their golden treasures to the miner's skill for forty years or more, and the supply is still exhaustless.

This gold belt of Georgia stretches northeast and southwest across the northern and a portion of the eastern sections of the State, and embraces, including barren spots, an area about 100 miles wide and 150 to 200 miles long. The most northern point where workable gold has been found is in Fannin county, on the Tennessee line, and the most southern point is in Columbia county, on the South Carolina border. The latter county has been but little developed, but with Lincoln county

is said to constitute one of the richest districts in the State. The greater part of the developed mines is found in the counties of Cherokee, Dawson, Lumpkin, Union and White.

The belt is identical with that of North and South Carolina, and has been traced for 200 miles along the southern base of the Blue Ridge. It is proudly stated that the first gold discovered in the United States was taken from this belt in 1797, the finder being a lad named Conrad Reed, and the locality Cabarras county in North Carolina. The find is said to have been as large as a smoothing iron, and was sold to a silver-smith, tradition says, for \$3.50. There are misty legends afloat, too, of a piece weighing 28 pounds being afterwards discovered. Prospectors followed westward the vein thus stumbled upon, and as early as 1820 began encroaching upon the Cherokee Reservation, which then covered all these mountain peaks and valleys. The rush was like that to California in 1849, though less in degree. Mountaineers by hundreds hurried into the territory, set up their log camps on the streams and began panning their gravel deposits. Naturally the Cherokees resented this intrusion, and almost daily collisions occurred between them and the whites. Georgia sent a strong police force into the territory, to preserve order, without effect, and a little later the United States were called in, with no better success. But in 1830 Georgia cut the Gordian knot by adopting the Cherokees as wards, lands and all, and erected their territory into a county called Cherokee county. She then divided the mineral lands into lots of forty acres each, and put them into a lottery, as was a fashion in those days. The lucky number, old miners say, was 1052, a lot on the Yahoosville river, already desolated, it having been long a custom for men to steal over there at night, bring home a meal sack from the vein, and wash out the next day from \$20.00 to \$40.00 worth of gold. The mines of the entire section, however, with the exception of some very small areas, are only in their infancy, and promise rich returns to labor and to capital for many decades to come. An important advantage possessed by this section, is that mining operations can be carried on practically all the year round, there being no snows or other causes sufficient to interfere.

There are fully 15 companies in active operation around Dahlonega, with large capital and all the modern appliances, and it is no trouble for them to reduce great mountains, or dig under and rob them of their gold, and yet, as just stated, the mining operations of Georgia are in their infancy.

Among the companies around Dahlonega, we note the Columbia, which is a strong company now operating only a half a mile from the town, with its stamps run by water power, and \$30,000 capital.

The Fishtrap company operates a mile and a half from town with 20 stamps run by steam, and \$40,000 capital.

The Ivey and Bast Consolidated Companies, with \$60,000 capital, run by water power in three-fourths of a mile of the place.

The Singleton Company, one mile distant, 20 stamps, water power, and \$15,000.

Barlow Company, 40 stamps, water power, 3 miles, and \$40,000 capital. General U. S. Grant and others after the war organized this company with \$200,000 capital.

The Ralston Company, 20 stamps, steam power, 3 miles and \$12,000 capital.

Gordon Company, 50 stamps, water and steam power, 4 miles, and \$50,000 capital.

Garnett Company, water power, 7 miles, \$20,000 capital.

Calhoun Company, 40 stamps, water power, 3 miles, and \$25,000 capital.

The Findlay Company, 50 stamps, water and steam, 1 mile, \$15,000 capital.

The Auraria & Chicago Company, 20 stamps, steam power, 6 miles, and \$10,000 capital.

The most important and largest of these is the Consolidated Company, composed of the Ivey & Bast Companies, running 60 stamps in one mill. Down into the deep gullies and excavations one is carried, where with picks, little giants and pent up steam powers, they tear away the bowels of the mountains and wash them down to the stamping mills where the flinty ores are pounded into powder and their precious metal caught upon quicksilver plates of zinc. The operation is very interesting, and presents a scene attractive and picturesque.

Dahlonega and its surroundings constitute one of the most interesting localities in the whole South, and when the railroad is finished which has been begun, and which they must have at a very early period, it will attract thousand of visitors and settlers every year. Its superb mountain and valley scenery, its invigorating atmosphere, its pure water, its healthful climate and its mineral resources are unsurpassed in the world.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more.

The B & O's Road to New York.

The friends of the Baltimore & Ohio railroad have cause to congratulate themselves on the outcome of the efforts of that road to secure an entrance into New York.

In his fight with the Pennsylvania road for a route from Baltimore to New York, Mr. Garrett has won a brilliant victory, and has secured for his road a route possessing many important advantages over that of the Pennsylvania's line.

The route from Philadelphia will be over the Bound Brook road to Bound Brook; from there a road 18 miles long will be built to Elizabethport, and a bridge constructed from that point across to Staten Island, connecting with the lines of the Staten Island Rapid Transit Company, all of the property and franchises of which have been secured by the Baltimore & Ohio Company, on very favorable terms. From the lower end of Staten Island, trains will be ferried to New York, landing at the Battery, where will be located the Baltimore & Ohio's depot. This route will have many attractions for travelers; passengers will be carried on the cars into New York city, and thus avoiding the annoying transfer from train to ferryboat.

All the elevated railroad lines in New York meet at the Battery just where the depot will be placed, and there will thus be avoided the walk through muddy and crowded streets from the wharves, where passengers over the Pennsylvania Road are now landed. It is also stated that the difference in distance will make possible a saving of twenty minutes in time from New York to Washington. One of the most important advantages, however, accruing to the Baltimore & Ohio, is found in the fact that its possession of the property of the Staten Island Rapid Transit Co. will give it at least two miles of frontage on deep water, thus affording ample room for the erection of warehouses, elevators, coal piers and other needed terminal facilities.

This solution of the problem that has perplexed the Baltimore & Ohio managers, is a gratifying one to the public, and accomplished in the face of the bitter and persistent opposition of the Pennsylvania Co., and in spite of the tremendous power and influence exerted by that corporation and allied interests, it evidences remarkable shrewdness and ability on the part of those who brought it about.

In the much-disputed question of Southern coke, a furnace superintendent at Birmingham tells the Birmingham Age: "The Pratt coke, which is used by all furnaces in Birmingham district, is now nearly as good as Connellsville coke, and when the Pratt people begin washing their coal before coking it, then their coke will be the equal of the best Connellsville coke in every respect, and superior to it in one—that of being almost entirely free from sulphur."

Restricting Credit in the South.

At the annual meeting of the Cotton Gin Manufacturing Association in New Orleans last week, it was decided to abolish the credit system and to make all sales payable at the end of the season in which the sales are made. For the good of the whole South it is to be hoped that this rule will be enforced, and that it will be the beginning of a general movement towards the shortening of the credit business in the South. One of the most serious drawbacks to the prosperity of the South is the almost universal credit business, extending from the purchase of farm supplies through the general ramifications of trade. It is an evil that has grown to such enormous proportions as to call for an earnest and united effort to remedy it. The southern planter who purchases his supplies for the house and farm on twelve months time, pays an enormous percentage, ranging from 50 to 100 per cent. over the cash price, and under such a drain it is very easy to see why he fails to make any headway. Hampered by such a tax it is often impossible to meet his notes in full and so he has them extended, thus year after year swelling the burden that he must bear. The merchant knowing this is compelled to make his credit prices extremely high, as compared with the cash figures, and even then, unable to make his collections when due, he is often unable to meet his own bills when they become due. The cotton gin business is reported by the manufacturers to have become badly demoralized through the credit system, and hence their determination to try to rescue it from its present condition by restricting credits. Their action deserves the commendation of everyone interested in the welfare of the South, for a thorough permanent improvement of the financial condition of the South can hardly be expected, unless there is a preceding improvement in the business methods as relating to credits of that section.

Col. Sellers Eclipsed.

The prospectus of the American Exhibition to be held next year in London is something unique in its way. As previously pointed out in these columns, the exhibition is a money-making scheme, devised for the benefit of a few Americans abroad, with nothing national in its character. Of the ninety-four pages which the prospectus contains, only eleven refer to the objects of the exhibition, the balance being taken up with a list of gentlemen styled the "Council of Welcome," which would rejoice the hearts of Cyrus Field, George Washington Childs, A. M., and all other members of the snob family. It bristles with the names of dukes, marquises, earls, viscounts, lords and baronets. The English peerage is exhausted before the end is reached. It's a pity that George the Count Johannes is no more. Any one with less rank is unworthy to look after the exhibition's interests on this side. —Journal of Fabrics.

We have repeatedly called attention to the uncertain position of this proposed exhibition, and asked for

some information regarding its financial backing, but so far have failed to get it. We have written to several of its earnest supporters who have warmly advocated the spending of money by Southern States to make exhibits at this exposition, asking for reliable information, but have found that they knew nothing personally about its affairs, and merely took it for granted that it is what its promoters claim for it. It may be all right, and we hope that it is, but surely the Southern States ought not to spend money in preparing to exhibit their resources until they know a little more about it than they do at present. We very seriously doubt whether any of our Southern friends, who are urging expensive State displays, really know anything about this exposition.

NOTES.

The New York Mail and Express suggests that, in view of the great danger of fire, Southern cities ought to prohibit the erection of wooden buildings within city limits. The number of wooden buildings in Southern cities is undoubtedly too large for safety, and especially of old houses, that need but a spark to set them to burning. If only metal roofing of some kind were used the danger from fire would be greatly lessened. And in view of the cheapness of metal roofing, and the great variety, including slate, tin in various shapes, iron, copper, glass, etc., the expense of putting on metal roofing would be very small.

The Western part of North Carolina is improving very rapidly, and the prospects now favor a wonderful development of that section. The building of new railroads has opened up that magnificent country to trade and travel. The beauty of its scenery and the healthfulness of its climate are attracting an ever-increasing number of visitors. In summer the people of the "low country" in the South go up into the mountains of Carolina to enjoy the delightful climate, and to escape malaria, mosquitoes and other evils of the coast, while in winter Northern and Western people crowd mountain hotels seeking health in the dry bracing climate, and finding the moderately cold weather of the mountains very comfortable as compared with extreme severity of the winters farther North and West.

The incoming of these visitors, the permanent location of many well-to-do people in this section, and the improvement of the agricultural interests are greatly stimulating the growth of many of the towns. Asheville, which only a few years ago was a very small town, is now becoming quite a large and prosperous place. The Citizen, of Asheville, in a recent issue, predicts that there will be over a half million dollars invested in and very

near that town the coming year. These investments will embrace various enterprises, some of them adding materially to the population of the city, and, of course, will very largely increase the trade of the city and section. The outlook is certainly very encouraging for Asheville. In addition to these local investments and improvements, the same paper says: "We have the best of reasons for knowing that several hundred thousand dollars will be invested in various ways west of Buncombe."

The early completion of the Asheville & Spartanburg Railroad will, it is thought, be of vast benefit, not only to Asheville, but the whole country along its line. It will become an important link in through travel, and make Asheville, and the country between there and Spartanburg more accessible to visitors from the South and North alike.

It is stated in the Alabama papers that the Louisville & Nashville Railroad has sold 150,000 acres of land in Alabama to a Cincinnati syndicate for colonizing purposes. The price is reported by one paper to have been \$1,000,000, but this is probably a good deal too high, as large tracts of fine land can be purchased in the South at a considerably less rate per acre than this.

The Louisville & Nashville Railroad Company have appointed Mr. G. B. West special agent for their land department, and in so doing have done a wise thing. Mr. West is one of the best posted men as regards the resources of the South that can be found. He has been connected with the Erlanger system of railroads, and is also an editorial writer for the New Orleans Times-Democrat, and a regular correspondent from Birmingham of the MANUFACTURERS' RECORD.

There is a fair promise of considerable activity in railroad building in the South in the near future, and some very important lines will probably soon be under construction. Their number is too great for a separate mention, but among them are some lines that are worthy of special mention on account of their prospective value in developing the country.

In South Carolina and Georgia narrow gauge railroads are meeting with great favor. It was only a few weeks ago that the completion of an excellent narrow gauge railroad, running in an almost air line from Spartanburg, S. C., to Augusta, Ga., was celebrated by a big banquet at the former city, and now a new road to be known as the Atlantic & Great Western, is getting under way. This line is to extend from Johnston's, on the Charlotte, Columbia & Augusta Railroad to Greenville, S. C. The directors are well-known men of push and enterprise, Col. H. P. Hammett, the very successful cotton manufactur-

er, of Greenville, having, after considerable solicitation, accepted the presidency, and also having subscribed \$7,500. Other liberal subscriptions have been made, and the prospects are favorable for the early construction of this much-needed line.

Lynchburg, Va., is looking for more Southern connections, and the business men of that city are determined to try to build a railroad from there to Durham, N. C. In addition to its many other advantages, this road would be of great value to the tobacco manufacturers of Lynchburg, as it would enable them to draw their leaf tobacco from some of the best tobacco sections of Virginia and North Carolina. At the same time, it would, of course, furnish the tobacco growers in these sections a good market, and so to them it would be of as much value as to Lynchburg's tobacco interests. Vigorous efforts for its construction are to be made, and Lynchburg's business men and capitalists ought to see that they are successful.

The proposed road between Memphis and Birmingham, previously commented upon, has taken definite shape, and it looks now as though these two thriving places are to be united. The Memphis, Birmingham and Atlantic Railroad is the name of the organization, and its promoters are capitalists of Richmond, Va. and Memphis, Mr. James B. Pace, a Richmond millionaire, being president. The amount needed to complete the road is said to be \$4,500,000, and this, it is claimed, has been subscribed. Some legislative action is needed before construction is commenced, and after this has been secured the work, it is expected, will be pushed right through. This road will give Memphis cheap coal, and will doubtless largely develop her manufacturing interests, and at the same time give Birmingham miners a new market for their coal. For both cities it will accomplish great good.

The Memphis & Charleston Railroad Co., at their annual meeting, Nov. 13, decided to issue \$2,500,000 of bonds for the purpose of extending their line from Stevenson, Ala., to Chattanooga.—The Norfolk & Western Railroad Co., it is stated, have secured the necessary funds to complete their Cripple Creek extension, a distance of about 23 miles.—Mr. Fawcett, the president of the Anniston & Northern Railroad, writes that work on this road will be commenced very shortly, probably by the first of January.—A letter from Gadsden, Ala., says that a railroad will be constructed very shortly from that city to Jacksonville.—According to a Pittsburg dispatch, a company has been formed to build a railroad across Kentucky and through the coal region of Tennessee.

Notwithstanding the set back which the new town of Sheffield in Alabama

received by the financial panic of May, 1884, which prevented the consummation of plans that had been formed for the development of the town, the place is now making good progress, it is stated by Mr. A. J. Moses, the general manager. In 18 months Sheffield, according to Mr. Moses, has accomplished as much as Birmingham did in the first 7 years of its existence.

* * * *

Sheffield is the place where the first sale of town lots created so much excitement, town lots in a corn field selling for an average of about \$9,000 an acre. The very fact of land commanding such enormous prices in a town, that was such only in name, frightened away many conservative people who supposed that there was no solid foundation to the enterprise. Now, however, confidence seems to have returned, and a large amount of money is being put into improvements. At present twenty-five new buildings, mainly of brick and iron, are under construction.

* * * *

Ellison & Co., of Liverpool, in their annual review of the cotton trade, say:

"At the moment, buyers are very shy, although November to January deliveries at 5 3-16d., which price is lower than has been touched for 30 years, except for 20 days in the month of December, 1878, when business everywhere was semi-suspended, owing to the financial and commercial panic. Still lower prices may be witnessed, but a marked change will come some day, and many spinners are acting wisely in at once commencing to buy. No one can hope to catch the bottom of the market for all he wants."

* * * *

The same firm in commenting on the large number of stock companies organized in England in 1881-84 to build cotton mills, and the ease with which so many gigantic spinning companies were floated, say:

"Given a promoter, an architect, a builder and a machine maker, select a period when the industry has just recovered from a long spell of depression, when the existing mills have recommenced to pay dividends, and when the public takes a sanguine view of the future, and the thing is done."

* * * *

Florida is getting to be the place for big hotels. Hotels are pretty much everywhere, and of all sizes and styles, the largest and costliest now under construction being a \$2,000,000 house that some of the Standard Oil people are putting up at St. Augustine. This is designed to surpass in magnificence and general style everything else in the hotel line in the State. St. Augustine is said to have \$3,000,000 invested in hotels already, and this new one will make the amount \$2,000,000 more. Their aggregate capacity is put at 6,000 people.

Prosperity of Birmingham--The Tariff on Raw Materials--The Waterways Convention, etc.

[Special correspondence BALTIMORE MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., Nov. 23, 1885.

Thanksgiving Day approaches under circumstances quite satisfactory to the public of Birmingham, and the conditions, I am happy to state, appear to be such that the annual thanks put up this year from the burgh will be hearty and full, and not perfunctory. Here in a more or less remote corner of the continent, we are somewhat out of the general swim, and not in the best position to know the inside facts of the country's trade history for the year. We do know that if it should prove to have been a profitable season, even in the smallest degree, the result would exercise a most important effect upon the course of commercial and industrial events for the year 1886. And that being time of the whole country is also time of a part--this part for example. Enough is known already of the standing and condition of our manufacturing establishments to justify the prediction that, with scarcely an exception, the books for 1885 will show a profit, and in some cases a handsome one. I suspect that the clean-up of Birmingham iron accounts on the first of January is anticipated with interest in some Eastern quarters. There was a strong combination of faith and hope in the assertion of some months ago, often repeated in an iron journal in the Pennsylvania interest, that our iron masters were "breaking themselves as well as the market with their cheap iron." The opening of the new year, and Dun and Bradstreet, will settle that matter officially. In sober truth the general prosperity of this city, compared with the situation of others, both in this section and north of us, has been and is really phenomenal. Building operations and improvements go on unceasingly and increasingly. Everybody is busy; the entire labor element is employed, and the material interests of the community never appeared to be in better shape. The new furnaces and other enterprises hitherto discussed in these letters are making good progress, and altogether our Eastern iron friends are destined to a considerable disappointment if they fancy that this *bete noir* of the Pittsburgh furnacemen is not forging straight ahead.

* * *

Since it may be taken for granted that Birmingham and Virginia, its sister missionary in the iron markets of the East, are still pushing to the front with their cheap but merchantable wares, I think it reasonable to expect that there will be numerous Eastern accessions to the ranks of those who see in free-trade in raw materials all the beauties of a great moral reform. I am afraid that the Keystone iron makers, for instance, who have seen Alabama iron sold under their noses dollars under the cost at which they can produce it on the present basis, will rapidly come to believe that the real, genuine article of protection is the sort that only protects the finished work of Pennsylvania manufacturers, and that the kind which merely justifies the existence of harmless necessary iron and coal miners and limestone quarrymen, with the transportation interests, labor and so on, dependent upon them, is a delusion and a snare. The recent growth of this feeling is pretty certain to bob up serenely in the coming session of Congress, and to afford a new version of the proverb about strange bed-fellows.

* * *

It will be met by another infant phenomenon perhaps equally strange and alone "worth the price of admission." If it be a queer sight to see the lion of Pennsylvania protection lying--in more senses than one--in company with the lamb of absolute free-trade, for the purpose of dreaming out a

scheme of free raw materials, it will be not less instructive to observe that the ranks of the army of protection to American enterprise and labor, are splendid with the heavy battalions of industry in the New South. I can think at this moment of dozens of staunch, life-long Democrats, representative men in their several communities, in Birmingham, New Orleans, Vicksburg, Houston and Dallas, in Atlanta, New Berne, Raleigh, in Nashville and Chattanooga, and all over the two Virginias, who would drop the Democratic party like a red hot casting, if they believed that democracy definitely meant the withdrawal of reasonable tariff protection to American industry. These men are the progressive spirits whose pluck and money has given to the New South whatever measure of industrial success it has achieved. It seems hardly worth while to discuss the attitude that the laboring class, identified with Southern industries, will assume. As far as I have means of information, the workingmen are solidly for protection everywhere throughout the section, and the political leaders of the dominant party will hardly be blind enough to antagonise this element. It is a burning pity that the tariff agitation should be resurrected to harass enterprise at this juncture, but there is comfort in the reflection that the masses everywhere were never before so well informed and never so well affected to the typical and reasonable American policy. On any question of free raw materials or other tariff issue in Congress, the delegations from Louisiana and West Virginia will be found solid for protection. It is probable that the same might be said of Georgia. While it would not be equally safe to count upon the other delegations, it is beyond doubt that Alabama, Virginia, Tennessee, North Carolina, perhaps South Carolina, and Texas, will be divided. Surely the enemies of our young and struggling industries have a large contract on their hands.

* * *

The Waterways Convention at Tuscaloosa met last Tuesday with about 250 delegates, representing nearly all the leading towns and interests in the State. The nature of the memorial adopted for presentation to Congress had been long discussed, and fully explained in the MANUFACTURERS' RECORD, in advance. According to Major Damrell, of the Government service, \$200,000 will be required to commence the improvement of the Warrior, and \$1,500,000 to complete the work, which can not be done in a day. It is interesting to note that while New Orleans regards and comments upon this movement to make Mobile a great gulf coal port in the most good-natured manner, places like poor old dead-and-gone Pensacola view it with alarm. The paper printed at Pensacola, the Commercial, takes an advanced position and argues that all schemes in the direction of improvement of minor water routes are wrong in principle. The only thing anybody really wants in order to be happy and great is a deep water harbor, which Pensacola has, and plenty of trunk lines terminating at that harbor, which Pensacola neither has nor is likely to get. Nevertheless the argument is not without force in a general way. The coal roads of Pennsylvania have shown how nearly a properly organized rail coal service can be made to compete with water rates, and even supposing that Congress should do all that Mobile asks to be done for the Tombigbee and Warrior, and then that the improvements accomplish all the practical good expected, it is not impossible that the trunk lines might be able to compete with Mobile prices at New Orleans. History advises us that when railways have to compete with water it is truly astonishing how closely they can figure.

* * *

In local matters perhaps the most important item of the week past has been the consummation of a sale of about 170,000 acres of mineral, timber and agricultural

lands in North Alabama by the Louisville & Nashville Land Department. The purchaser is a syndicate of Cincinnati capitalists, principally German-Americans, who propose to go extensively into German colonization. The region in which the estate is situated is an extremely salubrious one; well watered and timbered, and offering support to a large farming and industrial population. A foreign syndicate is understood to be in active negotiation with the same corporation for another and still larger block of lands near Birmingham. At this rate the Louisville & Nashville lands in Alabama will be soon disposed of, but that would not leave the company quite landless, as it has a nice little tract of several million acres of the most desirable lands in Florida, including all that section about Lake de Funiak, the Southern "Chataqua."

* * *

The seasonable fact that rolling mill men and other users of Birmingham pig metal are letting stocks run down against the close of the year's business is not without effect on the iron market. All the furnaces are producing about as previously reported, and stocks are not increasing much, as former orders still absorb a good deal of the product. But the demand is not as pressing as it was two or three weeks ago. However, there is little trouble to place the output at quotations, which are still unchanged.

G. B. W.

THE earnings of the railroads is a fair index of the condition of the business interests of the country, and so it is gratifying to note a decided improvement in railroad earnings. The Railroad Gazette in its last issue says:

"We have now reports from 32 roads and their aggregate earnings in October were:

	1885.	1884.	Increase, P. C.
32 railroads....	\$18,112,405	\$16,929,947	\$1,182,458 6.7

It has been so long since any considerable group of railroads has shown any increase in aggregate earnings that this large increase of 32 railroads, whose earnings are usually about half as great as those of the entire 70 reporting outside of the Eastern States, seems amazing. And the improvement is general. Only nine of these 32 roads had any decrease in earnings in October, while of the 31 of them that reported for September 13 had a decrease, and the aggregate net increase of the 31 was \$351,686 then, against \$1,126,405 in October. Yet September was notable for the improvement shown compared with previous months of this year."

BUSINESS AT WORCESTER.—The business situation at Worcester, Mass., one of the principal iron towns of New England, is much better than a year ago. The loom works are particularly active, L. J. Knowles & Brother, for example, reporting that they are obliged to run evenings to keep up with their orders. A great many woolen mills are renewing their machinery, and some are building additions in order to be ready to make the most of the anticipated general trade revival. The outlook at the steel works and the wire works is also more favorable. With the ordinary machine shops the gain is less pronounced. Treasurer Chase, of the Worcester County Institution for Savings, notes some degree of prosperity among the working classes. During the last period of good business many mechanics built houses for themselves, and something is thought likely to be done in the same line next year.

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the BALTIMORE MANUFACTURERS' RECORD. We are always prepared to furnish proof of our claims as to circulation.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

A. H. Howland & Co., who are building the water works at Montgomery, Ala., previously reported, have incorporated as the Capital City Water Co.

The Birmingham Electric Light Co. has been formed at Birmingham, Ala., by the Elyton Land Co. and Thompson-Houston Electric Co. to erect electric light works. Capital stock is \$30,000. Machinery has been ordered and will be erected at once.

N. W. McAfee & Co. will probably engage in the manufacture of brick, terra cotta work and pottery ware at Talladega, Ala.

M. W. Hand, Forkland, Ala., will erect a steam saw and grist mill and ginnery.

FLORIDA.

The Palatka Gas Light & Fuel Co., Palatka, Fla., previously reported as organized, have let contract for building their works, to be finished by Jan. 15.

G. A. & George A. Squier will put additional machinery in their planing mill, three miles from Welaka, Fla., to do cabinet work.

A saw mill, it is stated, has been located at Huntington, Fla.

Ward & Holland are building a saw and grist mill and gin in Florida, four miles from Williams' Station, Ala.

The capacity of the Leesburg Ice Factory, Leesburg, Fla., will be increased from 5 to 10 tons per day.

John Chaffin & Co., Milton, Fla., previously reported as preparing to erect a large saw mill, have nearly completed their mill.

George W. Robinson & Co. will shortly erect a large planing mill at Millview, Fla.

GEORGIA.

The building of water works is being agitated at Thomasville, Ga.

The report referred to last week that the Trion Cotton Factory, Trion, Ga., was damaged \$30,000 by flood is incorrect.

The full amount, \$10,000, has been raised at Conyers, Ga., to build the cotton-seed oil mill and guano factory, previously reported. D. M. Parker can give information.

W. A. Jeter, Hawkinsville, Ga., previously reported as having contracted to establish gas and water works in Brunswick, Ga., has, with Arthur E. Boardman and others, incorporated the Brunswick Light & Water Co.; capital stock \$50,000.

G. M. Williams, Louis Hamburger, W. A. Swift and others have incorporated, at Columbus, Ga., the Union Land & Oil Co., to engage in mining, manufacturing, &c.; capital stock to be \$75,000.

The Brunswick & Western Railroad Co. will, it is reported, remove their shops to another site at Brunswick, Ga., and enlarge and improve them.

KENTUCKY.

The flouring mill of F. J. Brownell, Hopkinsville, Ky., reported last week as damaged by boiler explosion, is being rebuilt and the machinery replaced.

A large building at Bowling Green, Ky., has been refitted for a tobacco factory. Will employ 30 to 40 hands.

The Snead Iron Co., Louisville, Ky., will erect an addition to their foundry, 50x210 feet, at cost of \$7,000, and fill it with the latest improved machinery.

New machinery will be put in the saw mill of U. J. Holland, at Madisonville, Ky.

D. Ford, Owensboro, Ky., is enlarging his tobacco factory.

MARYLAND.

The Rock Ridge Distilling Co. have erected a new distillery near Leitersburg, Md.

The Inspector of buildings, Baltimore, will receive until December 2, bids for erecting a school house to cost about \$15,000.

The Warfield Manufacturing Company, Baltimore, will build a warehouse three stories high, 50x69 feet, on North St.

MISSISSIPPI.

J. R. Hood, State Line, Miss., has erected a saw mill at Millview, Miss. The mill reported last week as being built at State Line by him is a corn mill.

NORTH CAROLINA.

Avery & Erwin, Morganton, N. C., propose to invest from \$30,000 to \$40,000 in a furniture factory at Asheville, N. C.

Swink & Thomason, Salisbury, N. C., contemplate erecting a tobacco factory.

I. F. Dortch will receive until Jan. 1 bids for erecting the water works at Goldsboro, N. C., previously reported to be built at cost of \$35,000.

Joseph E. Pogue, Raleigh, N. C., will probably enlarge his tobacco factory in a few months.

W. W. Cobb will start a tannery at Highlands, N. C.

William Partridge, Highlands, N. C., has improved his flour mill by putting in another run of stones.

A movement to establish a tobacco factory and warehouse at Concord, N. C., has been started.

Moore & Brady, New Berne, N. C., are considering the question of adding other industries to their canning factory.

New machinery will be put in by the Yadkins' Falls Manufacturing Company, Milledgeville, N. C.

TENNESSEE.

T. L. Harvey, Clarksville, Tenn., reported last week as contemplating engaging in the manufacture of tobacco, will erect a factory, three stories, 50x60 feet, by next summer.

W. N. Johnson & Co., near Greenbrier, Tenn., will rebuild their barrel factory, reported in this issue as burned.

Parthena D. Etheridge, Prigmore, Tenn., contemplates improving her corn mill.

Weakley & Warren, Nashville, Tenn., will rebuild their furniture factory, reported last week as burned; loss \$35,000.

John Bollinger, Dandridge, Tenn., is making arrangements to build a woolen mill.

Bollinger Bros., Dandridge, Tenn., will build a new foundry and machine shop at some point in East Tennessee.

Hasty & Johnson have moved their mill to a point five miles from Columbia, Tenn.

Gallatin, Tenn., has decided to have water works. Wm. Spradin can give particulars.

It is reported that a company has been organized at Johnson City, Tenn., with a capital stock of \$75,000, to establish a veneering mill; also that part of the machinery has been ordered.

A planing mill will, it is reported, be moved from Hickman, Ky., to Dickson, Tenn.

Taylor & Crate, of Buffalo, N. Y., have purchased for \$5,500 the saw mill of Z. T. Treece, at Chattanooga, Tenn. New machinery, it is stated, will be put in at once.

Morrison & Woodward are enlarging their saw and planing mill, at Chattanooga, Tenn., by a two story addition, 36x60 feet, which will be filled with new and improved machinery.

T. Fort, J. W. Crouch, W. S. Marshall, M. H. Clift and T. G. Montague will charter at Chattanooga, Tenn., the Mission Ridge Railroad Company.

TEXAS.

The report last week that Scruggs & Whaley, Gainesville, Texas, are building a roller process mill is incorrect. They are changing their present mill, capacity 70 barrels daily, to a roller process mill with capacity of 100 barrels.

The city council of Bonham, Texas, is discussing the building of water works.

Dallas, Texas, has contracted for three miles of water pipe at cost of \$30,000.

The Texas Trunk Railroad has been sold to W. W. Wrigley, of New York, who will extend it to Athens.

WEST VIRGINIA.

John B. Hastings, Ironton, Ohio, is working up the organization of a stock company in Charleston, W. Va., to erect a nail factory.

J. Lake, J. M. Lake, C. R. Lake, Floyd Davisson and others of Taylor county, W. Va., have incorporated the Lake Distillery Co. to do a general distilling business. Capital not to exceed \$20,000. Principal office to be at Webster, W. Va.

Charles Gorsuch, Bloomery, W. Va., is having roller process machinery put in his mill.

BURNED.

The saw mill and ginnery of T. C. Hicks, Hicksville, Ark. Loss \$5,000.

Octave Hymel's sugar house in St. Johns parish, La.

The building and machinery of the Texas Machine Co., Palestine, Texas. Loss \$4,000.

Dubreuil & Lowes' shirt factory, Baltimore, Md., damaged \$12,000 by fire.

Mill and gin of Mutz & Cassidy, Ferris, Texas.

Tobacco factory of John P. Millner at Brosville, Va. Loss \$5,000.

Mr. Carmichael's saw mill near Lifseys' Store, Ga., destroyed by boiler explosion. Loss \$3,000.

The carriage and wagon factory of J. G. Tichnor at Vicksburg, Miss. Loss \$2,000.

Gin and mill of J. M. Taylor near Winchester, Ark.

Barrel factory of W. N. Johnson & Co., near Greenbrier, Tenn. Will be rebuilt.

H. B. Gaither's gin near Vidalia, La. Loss \$3,000.

Peter Curry's gin near Starkville, Miss. Loss \$1,000.

Railroad Shops.

BRUNSWICK, GA., Nov. 21, 1885.

Editor Manufacturers' Record:

The Brunswick & Western Railroad Co. has proposed to this city that if it would furnish certain land to them they would remove their shops and enlarge them. The matter has been referred to a committee, which, I am advised, will report favorably, and I think the council will confirm and adopt their report. Therefore, I think, you can safely state the shops will be enlarged and improved.

A. J. CROVATT.

Foundry and Machine Shop.

DANDRIDGE, TENN., Nov. 16, 1885.

Editor Manufacturers' Record:

We intend building a new foundry and machine shop at some point in East Tennessee soon. Would like to receive price-lists and catalogues from manufacturers of lathes and wood-working machinery.

BOLLINGER BROS.

Steam Laundry.

NATCHEZ, MISS., Nov. 16, 1885.

Editor Manufacturers' Record:

We will have in operation, within ten days, a steam laundry of large capacity, using the Troy machinery.

MCCORMICK & RUMBLE.

MOUSE CREEK, TENN., Nov. 20, 1885.

Editor Manufacturers' Record:

Mr. J. P. Pearson of this place, has been remodeling his flour mill 9 miles from here. He has put in all new machinery and expects to be running soon. His mill is driven by water-power, using two 15 inch Smith wheels, made at Athens, Tenn. Mrs. Parthena D. Etheridge, Prigmore, Tenn., expects to improve her corn mill; Hugh McElwell, Jr., will soon start his sack and bag factory, one mile from Mount Verd Cotton Mills. He contemplates making 2,500 corn sacks per day. This factory is driven by water power, using a 12 inch Smith wheel with 27 feet fall, the water being as clear as crystal and supplied directly from a single spring.

P. N. Shultz.

STATE LINE, MISS., Nov. 17, 1885.

Editor Manufacturers' Record:

We have recently erected a saw mill at Millview, Green county, Miss., for the purpose of sawing heavy timbers for foreign trade, also a fine corn mill at State Line, Miss., with an entire new outfit from the Simpson & Gault Manufacturing Co. of Cincinnati.

J. R. HOOD.

Will Build Water Works.

SELMA, ALA., Nov. 22, 1885.

Editor Manufacturers' Record:

The Selma Water Company has been organized with Henry M. Fuller as president and Col. S. W. Johns as secretary and treasurer. The company have entered into a contract with the city of Selma to construct water works, with capacity of two million gallons of water per day; water to be procured from artesian wells. Work to be completed on or before June 1, 1886.

H. M. F.

An Enterprising Town.

DICKSON, TENN., Nov. 21, 1885.

Editor Manufacturers' Record:

There is a regular organization of citizens at this place whose object is to induce manufacturers to locate here. It has been organized but a few weeks, and has already secured a planing mill from Hickman, Ky., and have the promise of other manufacturers. Are corresponding with a Paducah tobacco firm to locate here. This is a good tobacco section, and the farmers will grow it if a market is established here. This is a splendid opening for a tobacco house. Town is growing fast, 1,000 inhabitants, two railroads.

S. C. FREEMAN.

LOCKWOOD, GREENE & CO.

MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

Enlarged Mill.

GAINESVILLE, TEX., Nov. 18, 1885.

Editor Manufacturers' Record:

We are not building a mill, but changing our 70-barrel stone to a 100-barrel full roller mill.

SCRUGGS & WHALEY.

Saw Mill.

WILLIAMS, ALA., Nov. 17, 1885.

Editor Manufacturers' Record:

I am building a mill here. Think to have it sawing by 1st February, 1886. Capacity, 30,000 to 50,000 feet.

W. M. CARNEY.

Will Rebuild Factory.

NASHVILLE, TENN., Nov. 16, 1885.

Editor Manufacturers' Record:

Our furniture factory was burned on Thursday, November 12. Expect to rebuild at once.

WAEBLEY & WARREN.

Saw Mill.

FRIENDSVILLE, TENN., Nov. 16, 1885.

Editor Manufacturers' Record:

We are erecting a circular saw mill in this place, and have purchased our entire outfit.

JONES, BEALS & CO.

May Build Flour Mill.

COHOKE, VA., Nov. 19, 1885.

Editor Manufacturers' Record:

I am thinking of building a roller mill for flour meal; but as I have not yet fully ascertained what the cost of such machinery as I want will be, I cannot say at present what size mill I shall build or just when I shall commence it.

E. P. HAVILAND.

A Planing Mill.

PONLON, GA., Nov. 17, 1885.

Editor Manufacturers' Record:

We are building, and have about completed, a planing mill factory, with capacity of 50,000 feet of kiln dried lumber per day, such as flooring, ceiling and finished lumber.

THE MONTGOMERY, GA., PINE LUMBER CO.

Large Flour Mill.

ALBANY, TEX., Nov. 14, 1885.

Editor Manufacturers' Record:

We have formed a stock company at this place, capital \$25,000, and expect to have the mill in operation by the first of next May. It is to be a flour mill with gin attached. Stockholders have a meeting next Monday night to elect officers.

S. F. STINSON.

Water Works Improvements.

BALTIMORE, MD., Nov. 19, 1885.

Editor Manufacturers' Record:

After careful examination by ourselves and our engineer, we bought the bonds and a large majority of the stock of the Charlotte Water Works Company, in connection with Messrs. Brown & Lowndes, and have already engaged to make valuable additions and improvements. The works were built in 1882, and it is a valuable property, with a constant increase in income.

WILSON, COLSTON & CO.

New Tobacco Factory.

CLARKSVILLE, TENN., Nov. 21, 1885.

Editor Manufacturers' Record:

The report is correct, but will not be able to begin the manufacture of tobacco before the latter part of next summer, as I have a brick house to build in addition to the stemmery, which has a hanging capacity of 175 hhds. The brick house will be 50x60 feet, three stories high, for manufacturing.

THOS. L. HARVIE.

Tobacco Factory Contemplated.

SALISBURY, N. C., Nov. 14, 1885.

Editor Manufacturers' Record:

We contemplate erecting a tobacco factory, though we may not. We have built a large tobacco warehouse.

SWINK & THOMASON.

BONHAM, TEX., Nov. 18, 1885.

Editor Manufacturers' Record:

No prospect of a cotton and woolen mill here at present. City Council is discussing the question of water works, but I can't say what will be done.

F. D. PINER, Mayor.

BROSVILLE, VA., Nov. 23, 1885.

Editor Manufacturers' Record:

My factory was burnt on the night of the 17th, whilst in your city; insurance \$7,000, loss about \$5,000. Undecided as to whether I will build here or not.

J. P. MILLNER.

Planing Mill Enlarged.

LEXINGTON, N. C., Nov. 23, 1885.

Editor Manufacturers' Record:

We have added to our works, one Dobson's patent scroll saw, a four-sided molding machine, a double head and cap tenon machine and an iron frame buzz planer, the last three machines of H. B. Smith's make.

F. H. THOMPSON'S SONS.

Southern Mining Fields.

Mr. Chas. G. Mann, writing from High Point, N. C., to the Mining Review, says: "For the last six years I have occasionally given descriptions of prominent mines laying dormant, of which one after the other has been taken up by British capitalists, who have since reaped the benefit of their investments, as we shall see in the course of this letter. Even Western men from Colorado have settled here and are mining now with success. Foremost among these British North Carolina mines is the Hoover-hill mine, eighteen miles south from here, on the foot-hills of a porphyritic range of mountains 1,200 to 1,500 feet above sea level. The old gold diggers worked on this tract long before the war, skimming off the surface clay schist, that yielded them from 50 cents to \$5 per bushel, as they were in the habit of measuring their ore; when that was gone they sunk shafts and struck a rock showing free gold and sulphurets, but, unable to grind this hard blue clay slate with their Chilian mills and unwilling to spend money on the modern invention of a good stamp mill, they abandoned it.

To capitalists North, the appearance of the place did not seem to be inviting enough to stake their money, so my report on it went to England, and soon the necessary funds came forth to work it with, a twenty-stamp mill under a perfectly competent and economic management. The main shaft is now down 260 feet, and the monthly bullion product amounts to \$10,000 and over, which goes to London.

The free gold contained in the hard blue slate belonging to the Hursman formation, is worth about \$5 to the ton, but begins to improve materially. The vein is of enormous size. At my last visit, a few months ago, indications of an approach to a wall were discovered, but the proper walls have not yet been struck, although fifty feet drifts from the main shaft were driven to find them. The ore is, however, steadily improving and the latest assays give it a value of \$8 to \$12. There were already at the very beginning of deepening the main shaft stringers of the blue slate found studded with gold, worth \$600 to the ton and more. This British corporation is now in a most prosperous condition, having declared and paid over \$200,000 dividends during the past two years.

At the Russel mine, in Montgomery county, forty miles from here, work was

begun also by a British company early this spring. Its history is a repetition of that of the Hoover, only with the difference that here a great deal more work had been done, quarrying the ore from several hills, each carrying a large vein and reducing it in a dozen Chilian mills with steam power. Their largest excavation is a quarry 300 feet long, 75 feet deep and 80 feet wide. Here they left it at the outbreak of the war, being deprived of their slave labor; any attempt to go on would have succeeded no better than at the Hoover, as the vein matter turns into horn stone and the other rocks are feldspaths.

The present owners work twenty stamps, and a few weeks ago the first bar of bullion was shipped to England. There is a vein of very rich sulphurets on the ground, from which I once made a concentration for parties from Ohio, worth \$1,323 per ton, but they had their own reasons for not taking up this valuable property.

Quite recently I explored also for British parties a tract of 470 acres, twelve miles from here, that far exceeds in intrinsic value and quantity of workable ore both the above mentioned mines. It is traversed by two parallel veins 8,000 feet long and 5 to 7 feet wide. The one contains, in a clay schist, free gold of a high grade of fineness, worth, according to numerous assays, \$12 to \$19 per ton; the other, at a distance of 800 feet further south, is a more talcose schist with less grit than the former, containing auriferous sulphurets, assaying \$14 to \$15 per ton. The veins can be traced for miles beyond the tract, which is not more than three miles to the northeast from the Hoover, joining a tract of 300 acres, with a free gold vein of the same clay schist and of which I have the control.

In close proximity to this town are now two mines in successful operation on a vein that can be traced for fifteen miles. The Lindsay is one of the oldest mines in the State, with a record of over two million dollars production before the war. The owners intend to stock it with new machinery. The other is the old North State, recently gone into the hands of new parties. They have a twenty-stamp mill, which worked up all the old ore laying around loose, of which over \$1,000 were realized in five days' work. They have deepened one of the shafts on the vein 100 feet to open up new stoping ground, and at the present depth of 260 feet, they met a two feet layer of sulphurets, apparently continuing in depth, assaying \$50. This ore is shipped to the neighborhood of Salisbury for the extraction of the gold by the Mears chlorination process. This vein runs through lower Laurentian ground with walls of granite and chlorites; the free gold is found in limonite, mostly decomposed to the depth of 100 feet. There are many openings on the same vein in the course of twelve to fifteen miles made by the ancient gold diggers, all promising equally well.

The Fisherhill mine, with a ten-stamp mill on the same vein, six miles to the northeast from the above, has recently been put again in working order and will be successful under good management.

As labor and materials, timber, &c., and the distance of the vein never more than six miles from the railroad, these mines can be worked very cheap.

It is astonishing why capital from the Northern money centers does not avail itself of the many advantages mines like these present, instead of going out to the far West, where three times as much working capital is required as here, and where a close control of the management is out of question on account of the distance. From all present appearances it may be safely predicted, that when these and other of our best mines taken up by our British friends are fully developed, more than one million dollars in gold bars will find their way from North Carolina to London.

During the last six months I had many visitors from California, Colorado and other

Western States and cities, but regret to say that they are always in too great haste, and as the best of our mining tracts don't always lie close to a railroad, it is impossible to examine them with that attention they so well deserve between the arrival of the morning and the departure of the evening train. A day or two added to the time of your investigation, gentlemen, will make you better acquainted with the advantages North Carolina mines offer, and will largely increase the security of your investments."

CHAS. G. MANN, M. E.

Senator Morrill on the Tariff.

At a late meeting of the Liberal Union Club of Boston, Senator Morrill made a speech upon the tariff, in the course of which he said: "Let me say that free trade economy may be good enough for Great Britain, for England, but it don't do anywhere else. It won't do even for Ireland, and certainly not for America. It may be that some of your learned professors, who are sometimes politicians, are greater men than were Webster and Choate, or than are our Hoar and Dawes, but, I beg your pardon, up in Vermont we don't think so. They say, however, that we must have revenue reform. *Cui bono?* For whose benefit? For they assert that if we should reduce the tariff a good deal lower we might collect the same amount of revenue. Suppose that that were to be admitted, it is evident then that we should have to import a much larger amount of foreign merchandise and also should have to furnish a market for a much less, a correspondingly less, amount of American productions. It strikes me that the statesmanship that only seeks to create a market for foreign productions is un-American, and in my judgment the advocates of that policy have a legitimate claim upon the British Parliament for their services. The Lowells, the Appletons, the Lawrences, the Lymans and the Bigelows by planting manufactures on the sterile soil of Massachusetts—and they were the contemporaries of such men as Webster and Choate and of honest John Davis and of Winthrop—and thus developing and multiplying the employments of your people, giving every man of your State an opportunity to do his best, have secured its growth, its prosperity and its reputation the world over. Without this policy the farms of Massachusetts to-day would not bring one-half of their present valuation. It is through this policy that the rich endowments of your colleges have taken place. It is by this policy that you have established broadcast your common schools. Without it one-half, more than one-half, of the pulpits of your churches, and the church-going bells would to-day be silent. Without this policy your State to-day would not have one-fourth of the present magnitude of its population. And yet some of these men, if they could carry out their policy, if they could be successful, in my judgment, in a very short time would be nothing but tramps in the streets.

The Protective tariff is not a local question. Its beneficence touches the foot as well as the hand, the heart as well as the head. Its example, the example of Massachusetts, may be as safely followed in the South as in the North, in Virginia and Georgia as in Pennsylvania and New York, in the States beyond the Mississippi as well as in Illinois and Ohio. In fact, our great wheat fields of the West, unless they can find a great and steadfast home market, will soon find that they have no attraction to emigrants for their magnificent productions. A foreign market is a will o' the wisp. The only sure props of our great Western wheat and corn growing territory are a tariff and cheap transportation. But it is said that we must have revenue reform. And what is that? Why, it is a Mugwump gravitation downward toward Free Trade. The effect of it will be, whether designed or not, to cheapen labor and to deprive labor of some of its present comforts and ornaments. Its effect will be to send more of our children barefoot into the fields and into the workshops and fewer to the common schools. I may say that the free traders would emasculate the Declaration of Independence; they would not leave us enough manhood to support anything more than a government of the police, not enough to enable us to choose our own avocations."

Resources and Attractions of Rabun County, Ga.

PINE MOUNTAIN, GA., Nov. 20, 1885.

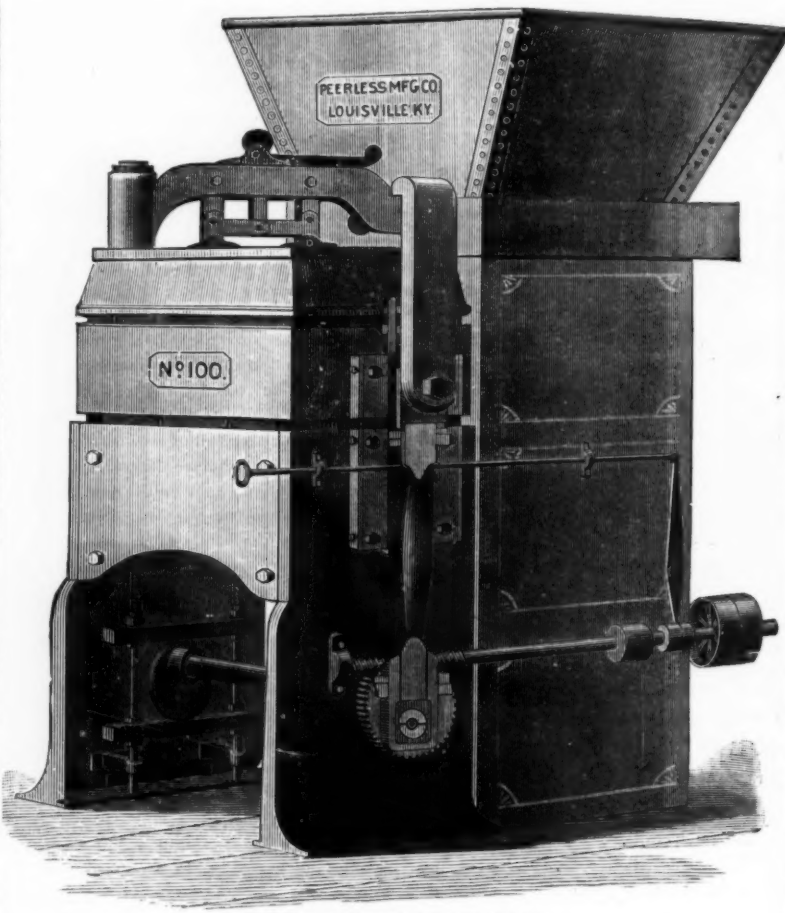
Editor *Manufacturers' Record*:

This place is in Rabun county, Northern Georgia, and was so named because from here pines may be seen in every direction, while only a mile or two further north up the Blue Ridge the pine belt nearly ceases. This is a healthy section, at an altitude of 1,600 feet above the sea, and the probabilities are that this place, under the present favorable conditions, will soon become a village of more than momentary note. On the west of the place, some 300 yards distant, is a placer gold mine, and a quarter of a mile distant on the east side is the famous corundum mine and its works, where the hum of industry is continually heard. A store is here filled with general merchandise, while the farmers in the vicinity have raised plentiful crops of grain, and with the good mast have fat hogs and cattle without cost, while they have stored away vast quantities of as well matured and fine flavored apples as are grown in America, with their keeping qualities not excelled by those grown in any other region. Peaches, pears, and the small fruits and berries do well, and for viticulture this region has many unsurpassed locations entirely protected and free from rigorous winters. The topography of the county is mountainous, so that farming can generally be conducted most successfully on a small scale, while cattle, hogs and sheep can be easily and cheaply raised largely and to great profit, as the range is extensive and good, on which many nutritious and valuable grasses grow with a spontaneity unknown to sections at this altitude a few miles north of here. The timber supply is safe for another century, and a view from Bald Mountain's crest will confirm belief in the assertion, for the view in every direction, as far as the eye can distinguish, shows forest-clad mountain and valley succeeding each other, with a village here and a clearing at intervals, just like dots on creation's surface. This county is sparsely settled and has room for hundreds of settlers to establish pleasant homes on its thousands of acres of now tenantless forests, where there are both good farming and grazing lands with timber of value in great variety and profusion, where rigorous winters are unknown, snow remaining generally not over twenty-four hours. Springs of pure, cold water are plentiful enough for any use, while the water power for machinery-driving purposes stands unsurpassed, as any one may see by noticing the Chattooga, Gunloco and Tallulah rivers, which carry large volumes of water, and Dick's, Timpon, Tiger, Persimmon, Churchero and War Woman creeks have powers sufficient to drive the machinery of the universe, with many splendid streams unnoticed. While mountain, foothill and valley succeed one another over this country's surface, the Bald Mountain is the highest, with an altitude of 6,000 feet; near it is Fodderstack, 4,000 feet high, and one and a half miles east of Clayton, the county capital, is Screamer Mountain, 5,000 feet high, and on whose summit Judge Blakely has a luxuriantly supplied and well appointed residence, which commands views as fine, lovely and romantic as this continent affords. The mines now being worked here are the corundum mine on Laurel creek, gold mine on Dick's creek, and a mica mine near Fodderstack Mountain. That this county embosoms vast mineral wealth the following indications lead one to conjecture, namely: the vast areas of placer gold, cupreous deposits, with various iron ores, such as magnetic, hematite, limonite, specular, spathic, corundum, kaolin, soapstone, both talc and pyrophyllite, millstone and grindstone grit, whetstone, and such building stones as red, gray, black, mottled and banded marble of differing shades, mica, chrome, pyrite and baryte. Here are beautiful quartz, crystallized in hexahedral pyramids, and in

divers places is the amethyst; also quantities of that fibrous variety of hornblends, with its silky luster, known as asbestos. Alumina is here in its crystalline state, and is exceeded in hardness by the diamond alone, and so the grey and brown corundum cryolites have more of its metallic base, aluminum, than any other known substance. In the county are fifteen grist mills and five saw mills. There are nine districts, namely: Moccason, War Woman, Churchero, Clayton, Valley, Tiger, Stone Pile, Tallulah and Persimmon. Each district has three school houses and three or more churches, which shows that there are twenty-seven school houses with as many or more churches in the county. The inhabitants are as quiet, peaceable and law abiding as are found anywhere, while the true hospitality of the natives exceeds anything that I might write that would appear reasonable, provided I attempted to delineate that trait in full. Their principles of honesty they hold as sacred things, and one can easily render himself an outcast here by showing up in dishonest actions. So great is the faith of the citizens of this locality in each others' honesty, that wagons loaded

disposed of here several years ago by the arrival of Dr. H. S. Lucas, from Massachusetts, who came here for the purpose of getting the corundum out of Pine Mountain. He came as a quiet, unobtrusive gentleman, was never molested, has done more for Moccason district than any other individual that has ever been here. The humanizing and civilizing influences and principles that he has practiced and brought to bear on the people are felt and recognized, and he is looked upon by them as their greatest benefactor. At his own expense he opens highways, the indispensable requisites of civilization, and keeps them up; regardless of cost he spans the rapid and turbulent mountain rivers and streams with bridges, and is now repairing two bridges that he put up last summer, and which were damaged by the flood that came on the morning of the 7th inst. These bridges are across the Gunloco and Chattooga rivers. He employs a considerable number in the mine, furnishes them with comfortable houses, and arranges for a good school so that their children can be educated. Mr. James Billingsly is putting up a grist mill here, and is aiding materially in Pine Mountain's prosperity.

J. W. WALKER.



THE RICE SAND MOLDING MACHINE.

with goods for Western North Carolina are frequently left alone on the roadside on the top of Pine Mountain, two miles from any residence, from Saturday evening until Monday morning. This custom has been practiced for several years, and to the present time the smallest article has never been misplaced or stolen, and no one thinks of locking doors.

The fact that Rabun is not more thickly populated may be partly attributed to false alarms sounded by people who had not been here, or if they had were interested in land speculations in other localities. Some of their reports were sufficiently startling to make the timid believe that the average Rabunite dined on rifle and pistol bullets, slaked his thirst with human gore, supped on gunpowder and bowie knives, were walking arsenals fringed with six shooters, and slept on magazines, and refreshed themselves in the morning, for the life-taking duties of the day, by breakfasting on fricasseed fat natives or stewed stranger, if one should happen that way, and that it was a festival affording rare merriment if the victim happened to be a Northern person. These delusions were

The Rice Sand Molding Machine.

The Rice Sand Molding Machine, shown in the accompanying cut, is a new invention which will be of interest to all manufacturers producing castings of any one kind in large quantities, and who desire to bring special machinery to their aid in order to cheapen their product.

It is covered by patents issued July 14, 1885, and operates upon principles that are entirely new in this class of work, and seems to promise great results in reducing the cost of castings.

The machine is very simple; every moving part is shown in the cut except the templet, or follower, which is described hereafter.

The peculiarity about the apparatus and the feature upon which depends its accuracy, is the fact that the face of the flask and the impression of the pattern in the sand is made by what is at the time virtually one solid piece of metal.

The pattern does not move, but is fixed rigidly to the bed of the machine. The

templet about the pattern, or follower, as it is called, rests solidly on the bed of the machine during compression, molding the face of the flask. After the mold is formed the follower rises with the flask, supporting the sand until the pattern is stripped.

As the relation between the pattern and the follower cannot change, every casting is an exact reproduction of the pattern, and cannot vary in weight or thickness, and this principle acts as well on a car wheel or oil-box as it does on thin or light castings, such as skillets or stove-plates.

It is claimed that the machine can turn out from forty to fifty finished flasks per hour, and that it can be operated with unskilled labor.

The working of the machine is described as follows: The pattern is stationary and immovable, and rigidly attached to the frame of the machine. The movable box, which supports the flask and binder, has an up-and-down movement about the pattern and templet. At the bottom of the down-stroke the templet, or follower, is exactly on line with the bottom of the flask, the pattern extending above it into the sand. The follower, or templet about the pattern rests firmly on the bed of the machine during compression, and after the mold is formed it rises with the flask supporting the sand while it strips the pattern, then slowly separates from the sand just before the flask reaches the limit of the upward stroke.

The cams shown inside the lower part of the machine raise the templet as described, and, with the pitmen on the outside, constitute the entire moving mechanism of the machine,—the stroke made by the cam rods and pitmen being nearly equal. The arched binder at the top is thrown to one side to take off and replace the flask, the cover attached to it holding the sand in the flask during compression.

In operating the machine it stops automatically at the right distance above the limit of the down stroke (usually about 1½ inches.) This leaves the follower the same distance below the top of the movable box and furnishes the space for the surplus sand that is to be compressed. The flask is then placed on top of the movable box filled with sand from the hopper behind the machine by an automatic movement of the sand drawer, and the binder secured in place.

The machine being started by movement of the friction clutch lever, completes its down-stroke, bringing the follower on a line with the bottom of the flask, thus forcing the the surplus sand into it.

The compression takes place at the line where the movable box and flask join, the density of the sand being the greatest at the pattern and face of the flask and gradually decreasing in density as it nears the back, giving perfect vent and obviating the necessity of using vent wires.

The Peerless Manufacturing Company, of Louisville, Ky., control the patents and manufacture the Rice Sand Molding Machines. They are prepared to show them in operation, and will be pleased to give any information on the subject.

North Carolina's Record.

Either progress in North Carolina is leading in the general progression of the South, or her citizens are more prompt to avail themselves of the opportunity given by the BALTIMORE MANUFACTURERS' RECORD for letting the world know what is going on within her borders. The last week's issue of that valuable journal contained nearly ten columns relative to this State. It is doing a great deal to advertise this State and should draw a large patronage from it.—Salisbury Watchman.

NOTE—If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year, or six months for \$1.50.

MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

GOLD MINE SOLD.

C. J. Knight, Esq., of Montgomery county, has, so it is reported, sold a recently discovered gold-bearing property in that county for \$12,000. In that county prospects for mining on a big scale are most flattering. Properties are changing hands, and large amounts of money are being spent for machinery. Not less than \$100,000 will be expended there for machinery during the next six or eight months.

A GEORGIA MINE.

Mr. Jno. S. Bird, Jr., of Charleston, S. C., is largely interested in a gold mine in Cherokee county, Georgia. It is near the North Carolina line, and has never been worked. The ores assay from sixty to more than three hundred and fifty dollars per ton. This is a very encouraging showing for a new locality.

LARGE NUGGETS.

The Vein Mountain Placer Gold Mine in McDowell county is producing some fine nuggets now. Recent reports mention two, weighing about two pounds each. Machinery is being placed on the property, and when it is put into motion it is hoped that the production of gold will increase in proportion to their improved facilities.

SHIVE MINE.

The Shive Mine, in Cabarrus county, is just over the Rowan county line, and is, in fact, the extension of veins discovered in Rowan. The property is being opened by S. C. Miller, of Salisbury, N. C., and is showing up well. It is a ferruginous quartz and brown sulphide ore. The

ROSEMAN MINE,

in the same neighborhood, (in Rowan,) is to be opened soon. This property has been developed recently by sinking a second shaft, and the ore, 27 feet below the water line, looks well. Dr. M. A. J. Roseman, the owner, says he thinks it will change hands soon.

NORTH STATE.

The board of directors of the North State Copper and Gold Mining Company, at a recent meeting held at the mines in Guilford county, assessed the capital stock ten cents a share, to be paid by the 14th of December. The money thus obtained is to be used in sinking the main shaft 100 feet deeper. When this is completed, that shaft will be nearly 500 feet deep. Their 20-stamp mill will probably be put in operation first of the coming year.

CABLE CREEK:

This a placer deposit. Cable Creek is a small stream which has its source somewhere near Davies mountain, in Randolph county, and which empties into Buck Creek, some three miles from its source. For a long time this short stream has been known as a prolific source for surface gold, and washing the soil and "grit" along its banks has given occasional employment to people living near for more than fifty years. There is now considerable panning going on in that district. The workmen dig down below the alluvium one to two feet to the grit bed, which is panned, or washed, in hand rockers, paying one dollar and upward per day to the hand. In some places they have turned the water from the original channel, and are engaged in washing the bed grit, which is also profitable. While panning they have recently come across small quantities of quicksilver in some of the beds, and at a depth of two or more feet from the surface. This was doubtless used long ago, and by parties unknown to those living in the vicinity now.

EMERALD AND HIDDENITE MINE.

At the recently held meeting of the directors of the above named property, Jas. D. Yerrington, of New York, was made

president; E. A. Hutchins, of New York, vice-president and treasurer, and W. E. Hidden, of Newark, N. J., superintendent. The latter reports that "the company is entirely out of debt, and has a surplus now in its treasury. Its future prospects are considered brilliant." Work is now progressing at the mines in Alexander county, N. C.

BLUE CORUNDUM.

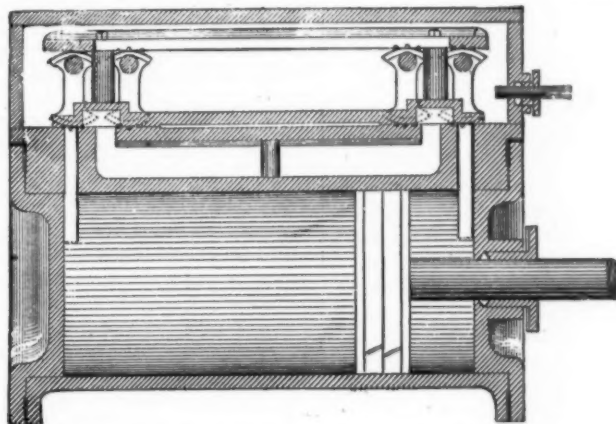
Professor J. A. D. Stevenson, of Statesville, describes crystals of opaque blue corundum from a locality in Iredell county. They are perfectly formed hexagonal prisms, of various lengths, and are found in a matrix of fibrolite. In this locality, it is thought, will ultimately be found crystals of sufficient purity and transparency to be used as gems. They are of the true sapphire color. The matrix of fibrolite—a changed corundum—is a rather rare mineral, but it occurs massive at the locality mentioned.

FRICK MINE.

Mr. G. W. Frick, of Rowan county, reports the discovery of a new gold bearing vein on his farm in Providence township. It is a brown sulphide ore, carrying free gold on top and pyrite below water level. The vein is eight to ten inches wide, six feet from the surface. It adjoins the Eller mining lands.

The Reaser Balance Valve.

No subject in connection with the steam engine has received more thoughtful attention than the problem of overcoming the friction of the valve. It is claimed that



SECTIONAL ELEVATION OF CYLINDER WITH REASER VALVE.

the Reaser Valve effectually accomplishes this, as it is absolutely frictionless, balanced in every position, simple in construction, and will stay in perfect order during the lifetime of the engine.

It has always been maintained that the slide valve is the most perfect way of taking steam, but the constant friction and wearing away of the valve have been serious drawbacks to the effectiveness of the engine. The friction of the valve not only causes a large loss of power, and a constant waste of steam and fuel, but in nearly every case where an engine does not work economically the trouble originates with the valve. As the power, durability and economy of an engine are entirely dependent on the action of the valve, if it be faulty in construction or operation, the engine cannot give good results. The advantages of having a large valve with plenty of travel are well understood, but the difficulty has been that the amount of friction is increased by increasing the size of the ordinary slide valve, and for this reason the tendency has been to make the valve small and give it but little travel, thus giving a slow, lazy admission and release, wire drawing the steam and losing more in this way than is gained by reducing the friction of the valve.

This valve being frictionless the manufacturers are enabled to make a long double valve with plenty of travel, and so get a full quick admission of steam through short, direct ports; thus getting the benefit of the boiler pressure on the piston, and reducing the clearance and consequent waste of steam

to the minimum. The Reaser Valve is simple in construction, it being a common slide valve supported on rocking or rolling standards, so that the weight of the valve and its load do not rest upon the valve seat, but upon the standards. These standards are curved at each end from a common center, so that the opposite ends are segments of the same circle. Projecting beyond the line of curvature at each end of the standards are one or more teeth, which fit into proper recesses to hold the



ENLARGED VIEW OF ROCKING SUPPORTS.

standards in place. One standard on each side at each end will support the valve for an engine of ordinary size, and for large engines one or more standards may be placed on each side between the end ones. They may be coupled together in pairs by a cross-bar, or may be separate.

A plate rests upon the upper ends of the standards, and the valve is suspended from this plate in such a way as to admit of its accurate adjustment to the valve seat. To see how much saving of power is accomplished, it is found by referring to the mechanical rule of friction, that the coefficient of friction of flat surfaces of like metals sliding upon each other, is 18 per

5th. It saves from 20 to 40 per cent. of fuel and water.

6th. It saves 50 per cent. of lubricating oil.

This valve is of great advantage on a marine engine, as with it the engine can be reversed as easily, under a full pressure of steam, as any other can be with the steam all shut off, which puts the engine more completely under the control of the engineer.

It is the object of the Reaser Balance Valve Company to have engine manufacturers apply this valve to their engines, and on application they will send them a model or drawing. When they have satisfied themselves of its merits reasonable terms for its use will be made.

The Reaser Balance Valve Manufacturing Company are in receipt of letters from well-known manufacturers, showing that their valve had made a saving in full as high as 50 per cent., to say nothing of the great saving in wear and tear.

Literary Notices.

THE QUIVER for December begins a series on "Famous Pictures and the Lessons They Teach," with Sir Joshua Reynolds' "Infant Samuel," giving a very satisfactory engraving after the original. Two new serials "The Heir of Sangford Towers," and "Oliver Langton's Ward," are begun in this number. They begin with the promise of being excellent successors of the stories that preceded them. Turning the pages in succession we find, "Out With the Deep Sea Trawlers," "Idle Words," a parable from nature, by Lady Laura Hampton, "Voices in the Night," by the Rev. W. M. Statham, "Old Anthony's Treasures," a character sketch by the Hon. Katherine Scott, illustrated by a striking page-picture of old Anthony; "Boughs, Birds and Belfries," "A Husband and Wife Mutual Improvement Society," by the Rev. E. J. Hardy, and other sketches and poems.—Cassell & Company, Limited, New York; \$1.50 a year in advance.

THE MAGAZINE OF ART for December is an unusually handsome number. Its frontispiece is a reproduction by the Berlin Photographic Company, of Van Ruysdal's "Cascade, with the Watch Tower," and is so good as to be well-worth framing. The opening paper is on J. W. Waterhouse, A. R. A., illustrated with several fine engravings from his best work. This followed by a paper on "Art in Egypt," by Wm. Holmeden, illustrated, and from the oldest country in the world, we jump to one of the newest, America, whose achievements in silver work receive the highest praise. Examples of some particularly fine work are given. This month's paper on the "Romance of Art" is devoted to Torrigiani, "Sculptor and Bravo." Then we have a paper on "The Lower Medway," a river beloved by the gossiping Pepys, and later by Charles Dickens. Mr. Brander Matthews contributes an interesting paper on "A French Theatrical Museum," in which he gives a careful and intelligent description of the treasures in the library of the Paris Opera House. This is appropriately followed by a "Ballad of Dead Actors," written by Wm. E. Henley, and illustrated by Elihu Vedder. Harry N. Barnett gives the history of the beginning and the rise of the Royal Academy which precedes "A Chapter on Chairs," illustrating some of the most striking varieties. Sidney Colvin has a paper on the "Reproductions of the Pictures in the Brunswick Gallery," illustrated by a page engraving of F. Bodemuller's "Old Venice." The department of notes is as full and interesting as usual.—Cassell & Company, Limited, New York, \$3.50 per year in advance.

THE principal articles in "The Popular Science Monthly" for December are, as is usually the case in that excellent magazine, marked by the vigor of their thought, and

the honesty with which they appeal to the intelligence of readers. The opening article, by the Count Goblet d'Alviella, on "The Scientific Study of Religions," defines what are the essentials of such a study. In the second article Prof. D. B. King describes the organization of the "Postal Savings-Bank" of European nations, and considers the applicability of the system to the United States. Mr. Charles P. Howard explains the principle of "The Refracting Telescope," with especial reference to its adaptation to the peculiar properties of undulatory light. Professor E. L. Youmans, who has tried the place, gives his estimation of "Thomasville as a Winter Resort." The other articles are "The Spirit and Method of Scientific Study," by Professor J. P. Lesley; "The Social Life of Arctic Birds," by Dr. A. E. Boehm; "Neuter Insects," by Mr. Charles Morris; "Masson's Interpretation of Carlyle," "The Uniformity of Nature," a "Sketch of Professor Alpheus Hyatt."—New York: D. Appleton & Company. Fifty cents a number, \$5 a year.

MISS MAMIE DICKENS, the eldest daughter of Charles Dickens, has written a short biography of her father which Cassell & Company will issue as their next volume in their "The World's Workers" series. Miss Dickens has condensed the story of her father's public life and has taken pains to show him as he was at home with his family, and at his work, and she has given what will perhaps be regarded as the pleasantest pen picture of the great novelist.

"WHAT TOMMY DID."—John Habberton, author of "Helen's Babies," says: "What Tommy Did" would be worthy of the serious consideration of parents if it were possible for any one to be other than wildly mirthful over the saintliness and dreadfulnesses of the little hero. Tommy is an ideal boy—one of the kind which are by turns unendurable and angelic, which changes parents from young to old, and from old to young again many times a day. We pity parents who fail to read this book; there is no time in the day, nor any day in the week, in which its pages will not dispel care." It has just been published in dainty delightful shape, fine cloth, richly ornamented binding by Alden, the "Revolution" publisher, at half its former price, 50 cents. Alden's 148-page illustrated catalogue (price 4 cents—condensed catalogue free), of his immense list of standard books, is a wonder as well as joy to book-lovers. John B. Alden, Publisher, New York.

GEO. J. FRITZ, of the Central Iron Works, St. Louis, reports the following as included in his late sales: 2½ horse power engine and boiler combined to S. B. Cook, Mexico, Mo.; Fritz improved barrel windlass to John Berri, St. Louis; No. 3 Geo. J. Fritz patent doctor engine, with cold water pump, to a mill in Dakota; three sets of five-ply steel cotton seed huller knives to various oil mills in the South; 150-gallon rendering tank to Concordia, Kansas; steam pump to Alabama; 1½ horse power Geo. J. Fritz patent engine to Alabama; quantities of pulleys, hangers and shafting to various parts of the country.—St. Louis Age of Steel.

THE plow factory of Towers, Sullivan & Co., of Rome Ga., is said to turn out 15,000 tons of work a year.

THE Sheffield Manufacturing Company, Sheffield, Ala., (P. O. Tusculum), want several wood-working machines, new or second hand, in good condition, and would like to correspond with manufacturers.

If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year, or six months for \$1.50.

THE MARKETS.

OFFICE MANUFACTURERS' RECORD,)
BALTIMORE, Nov. 25, 1885.)

The values in the iron market remain firm and unchanged. In the steel department, rails, tire, steel and toe caulk have advanced, and the former quotations have been withdrawn. We quote:

Ref. Bar Iron, 1 to 6x½ to 1.....	1.80	2 c
" " 1 to 4x½ to 1.....	1.80	2 c
" " ¾ to 2, round and.....	1.80	2 c
square.....	1.80	2 c
Hoop Iron, 1½ wide and upward.....	2½	2½ c
Band Iron, from 1½ to 6 in. wide.....	2½	2½ c
Horseshoe Iron.....	2½	3 c
Norway Nail Rods.....	5	5½ c
Black Diamond Cast Steel.....	9	10 c
Machinery Steel.....	3½	4½ c
Spring Steel.....	3½	4 c
Common Horse Nails.....	8	9 c
Railroad Spikes, 5½x9-16.....	2	2½ c
Boiler Tubes.....	57½	off list

The pig iron market remains without material change. There is quite an active demand for old iron rails and wrought scrap, both of which are scarce and prices tending upward. We quote as follows:

Baltimore Charcoal Wheel Iron (all Baltimore ore).....	\$26 00	@27 00
Virginia C. B. Charcoal Wheel Iron.....	26 00	@27 00
Anthracite, No. 1.....	18 00	@19 00
" " ".....	16 00	@17 00
" " ".....	14 00	@15 00
" " Mottled and White.....	12 00	@13 00
Old Iron Rails.....	18 00	@20 00
No. 1 Wrought Scrap.....	18 00	@19 00

HARDWARE.

We have nothing new to note in hardware; the volume of business continues fair.

We quote price of nails the same as last reported, and firm at \$2.75@2.85.

Philadelphia Iron Market.

PHILADELPHIA, November 24, 1885.

In all through the west of Pennsylvania there is a great deal of interest shown in securing enough iron, both crude and finished, to make manufacturers safe against any sudden fluctuation. The expectation of uncertain prices is exerting a favorable influence on the market, and quite a number of buyers who, two weeks ago thought they had enough material, have within a week made additional purchases, particularly in forge iron, for which they are paying \$15.50 delivered. Bessemer is firm and under active inquiry for foreign material. Several transactions have been closed and other sales are likely to be consummated during the week; prices range from \$19.00 to \$20.00. The best muck bars are delivered in the city at \$28.00. Merchant bar is not selling as fast as during October. Steel nails are gaining ground and helping to intensify competitions between bar iron makers for the business to be had. The nail situation is not materially changed from what it was a week ago; all stocks are bought up far in advance; among retailers prices are advancing. The orders from the West are still crowding, and the stringency, which has been so characteristic of the makers for months past, is likely to be continued. In the plate mills there is no sign of an increase of orders, but most of them are rather small. In the sheet mills the week's business has not been much different from that of any other week, and prices on the small lots have been very close to the ruling card rates. In wrought pipe a large amount of business is in hand, and makers are just anxious enough for winter's business to prevent as rapid an advance in prices as the volume of business ought to bring. The change made at the Pittsburgh meeting will be strictly lived up to. The bridge iron contracts for the week have not been different in magnitude or prices, yet there is a great deal of bridge work projected for the winter. The makers say that next year's demand will be sufficient to employ all the capacity that is put into shape. The rail makers have advanced prices on small lots to \$35.00, and are doing a weekly business at from 20,000 to 30,000 tons, in large and small lots. Old rails are in very urgent demand. Brokers have orders to make the

best terms possible for supplies to keep the mills in stock. Taking the iron market all through it has gained strength during the week, and, so far as indications allow an opinion to be formed, the formation of prices will continue. A little dullness is usually looked for in December. The coal trade is very active, and prices are at the top notch of the low range of prices that have prevailed for some months. The blowing in of some 4, or perhaps 5, furnaces is announced for December.

Cincinnati Iron Market Report

Specially reported by ROGERS, BROWN & Co., Pig Iron Commission.

CINCINNATI, Nov. 23, 1885.

A steady progress towards better things describes the iron market in all its branches. Producers of pig metal were prepared for a light demand during November and December, but it is probable that the past two weeks have witnessed the heaviest buying movement of the year. The St. Louis, Louisville and Newport Pipe Works alone have taken about 15,000 tons of Southern coke iron. As near as can be ascertained, none of this sold below \$14.00 cash on the Ohio River, for No. 1 Mill and Gray Forge. This nets the Tennessee furnaces about \$12.00 and the Birmingham furnaces \$11.50 per ton. Other sales reported are 1,200 tons Bessemer, 500 tons each, Southern, Silvery and Open Bright, 1,000 tons Ohio No. 2 and various smaller deals. The effect of this unlooked-for movement can hardly fail to be felt upon the general market, as stocks are very light elsewhere. In the South both Eureka furnaces are out for repairs. One of the Alice and one of the South Pittsburg stacks are also out temporarily. The second Sloss stack is about blowing in. Chattanooga and Cherokee have also lately blown in. There is little change in the status of Ohio furnaces. In the Lake Superior district stocks are low, except with two companies, who have piled iron from policy, and will sell none till there is a material change. Prices of Lake ore bands, charcoal and coke, are up about one dollar per ton. Our quotations are for cash:

HOT-BLAST FOUNDRY.

Ohio and Southern Strong Coke No. 1.....	\$16 00	@17 00
" " " " No. 2.....	15 25	@16 00
" " " " No. 3.....	14 50	@15 00
Ohio Soft Stonecoal, No. 1.....	17 00	@17 50
" " " " No. 2.....	16 00	@—
Mahoning and Shenango Valley Coke, No. 1.....	17 50	@18 50

CHARCOAL IRON.

Hanging Rock, No. 1.....	\$20 00	@21 00
" " " " No. 2.....	18 50	@19 50
Tennessee and Alabama, No. 1.....	17 50	@18 50
" " " " No. 2.....	16 50	@17 50

FORGE.

Strong Neutral Coke.....	\$14 50	@—
Mottled " ".....	13 00	@—
Cold Short.....	13 75	@—

CAR WHEEL AND MALLEABLE.

Southern Car-Wheel Iron.....	22 00	@24 00
Hanging Rock C. B.....	25 00	@27 00
" " W. B.....	20 00	@23 00
Lake Superior Malleable.....	22 00	@25 00

Specially reported by E. L. HARPER & Co.

CINCINNATI, November 23, 1885.

The business of the week has been active, and prices on many brands have been advanced. The satisfactory feature of the increased purchasing is that legitimate business warrants it, and the advance is not attributable to speculative buying. We quote as prices current here cash f. o. b. cars or wharf:

FOUNDRY.		Cash.
Hanging Rock Charcoal, No. 1.....	\$18 50	@19 50
" " " " No. 2.....	17 50	@18 50
Southern Charcoal " " " " No. 1.....	17 00	@18 00
" " " " No. 2.....	16 00	@17 00
Strong Neutral Coke, " " " " No. 1.....	16 00	@17 00
" " " " No. 2.....	14 50	@15 50
American Scotch, " " " " No. 1.....	15 50	@16 00

GREY FORGE.

Neutral Coke.....	13 50	@14 00
Cold Short.....	13 50	@14 00

CAR WHEEL AND MALLEABLE.

Hanging Rock, strictly cold blast.....	25 00	@26 00
Hanging Rock, strictly warm blast.....	21 00	@21 50
" " " " N. Carolina Warm Blast.....	25 25	@25 75
Amherst and Virginia Warm Blast.....	29 00	@29 50
Lake Superior Charcoal, all grades.....	29 00	@29 00

T. M. Parker, Steel Stamps, Stencils, Hartford, Ct.

List of Patents.

The following Patents were granted to citizens of the Southern States, bearing date Nov. 17th, 1885. Reported expressly for this paper by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.

Bassell, J. V., Leesburg, Va. Weather-strip.....	330,769
Briggs, Elias, Coleman, Texas. Apparatus for irrigating land.....	330,556
Brown, G. T., Belton, S. C. Combined envelope-opener and paper-knife.....	330,557
Brown, P. C., and T. P. Bragg, Ennis, Texas. Cultivator.....	330,467
Buford, J. L., Albany, Tex. Distance-instrument.....	330,818
Button, Joseph, Baltimore, Md. Car-coupling.....	330,820
Cadden, A. P., Baltimore, Md. Adjustable derrick.....	330,374
Clarkson, E. H. N., Baltimore, Md. Planing and matching machine.....	330,564
Gibbons, J. R., and M. L. Flowers, Rome, Ga. Combined pulverizer, harrow and cultivator.....	330,689
Greer, J. L., W. M. Harper and J. Greer, Headsville, Texas. Cotton-chopper.....	330,477
Grimm, Fred., Comanche, Texas. Post-hole auger.....	330,580
Hackett, W. H., Atlanta, Ga. Cotton-planter.....	330,393
Hamaker, A. W., and J. E. Peck, Moundsville, W. Va. Lifting-jack.....	330,582
Hamlin, W. P., Rogers, Ark. Bee-hive.....	330,478
Hampton, W. R., Bowling Green, Ky. Animal-trap.....	330,695
Helm, J. H., Monroe, N. C. Quilting-frame.....	330,482
Hutchinson, J. L., Baltimore, Md. Water-closet.....	330,706
Jones, L. T., Baltimore, Md. Umbrella drip-cup.....	330,789
Kalling, Lewis, Jr., Baltimore, Md. Bottle-stopper fastening.....	330,712
Knapp, G. W., Baltimore, Md. Cherry-seeding machine.....	330,839
Kone, W. W., Houston, Texas. Washing-machine.....	330,840
Lawhon, G. W., & W., Knoxville, Tenn. Cistern cut-off.....	330,470
Lea, S. J., Chattanooga, Tenn. Wrench.....	330,594
Lindsey, G. M., Baltimore, Md. Pulley-covering.....	330,598
McGavok, W. J., Memphis, Tenn. Current-wheel.....	330,503
McKeethen, Taylor, New Orleans, La. Lemon-squeezer.....	330,505
Nolan, Patrick, Chattanooga, Tenn. Railway-switch.....	330,509
Nutting, Adrian, Greenville, Texas. Car-coupling.....	330,416
Pierce, H. M., Nashville, Tenn. Manufacturing coke.....	330,731
Pierce, H. M., Nashville, Tenn. Furnace for the manufacture of coke.....	330,732
Redding, W. F., Tangerine, Fla. Crate for fruit, &c.....	330,620
Steinbach, G. P., Baltimore, Md. Wheel-securing device.....	330,748
Stephenson, Zadok, Verona, Ky. Cotton-drier.....	330,749
Thomson, Rush, Atlanta, Ga. Cotton-planter.....	330,440
Vanduzen, E. W., Newport, Ky. Boiler-tube cleaner.....	330,443
Watts, W. W., Louisville, Ky. Pocket toilet-case.....	330,649
White, Welcome, Baltimore, Md. Butter-package.....	330,653
Zeigler, D. G., Orangeburg, S. C. Hoisting-machine.....	330,765

PATENT LAW.

TRADE MARK LAW.

PAUL BAKEWELL,

Attorney at Law,

79 & 80 Turner Building, 304 8th St., ST. LOUIS, MO.

Branch, Crookes & Co.,
Liggott & Myers Tobacco Co., } St. Louis.
Excelsior Manufacturing Co., }

C. D. MOODY,

Patent Solicitor,

AND EXPERT IN

—Patent Causes,—

No. 710 Olive Street, ST. LOUIS, MO.

WM. H. BABCOCK,

Attorney at Law, Patents,

513 Seventh St., WASHINGTON, D. C.

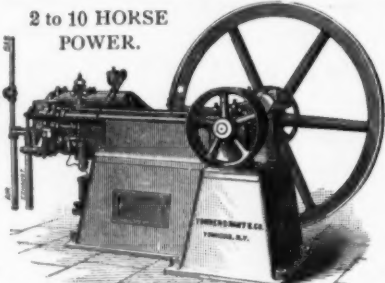
Three years' experience in examining corps. Eight years' practice. Moderate fees. Personal attention. Excellent facilities for obtaining foreign patents. All business before Patent Office hastened and aided by nearness to it. Opinions; searches; suits in court; interferences. Write (Box 220) for references, fees, information.

TOURISTS will find the American House, Boston, a most convenient point from which to visit places of interest. It contains a large number of suits of rooms particularly adapted to families traveling.

PARKER GAS AND GASOLINE ENGINE.

Guaranteed to Run with Less Gas than Any Other Gas Engine Known.

Always Ready
to Start.
Lighted by Electric
Spark.
Simple.
Durable.
Effective.

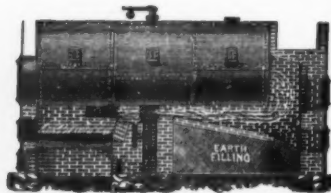


No Boiler.
No Coal.
No Ashes to
be Removed.
No Chimney.
No Engineer.
No Smoke.
No Smell.

No Slide Valve to Get Out of Order. Does Not Hazard Insurance.
No Small Parts to Clog Up. Is Noiseless in Running.
Requires no Matches to Ignite the Gas. Can be Run with Any Kind of Gas.
It is the only Engine that can be run equally as well with Gasoline Gas or Carburetted Air, as with regular fixed gas. Speed can be adjusted while running from 60 to 200 revolutions per minute.

YONKERS MFG. CO. Salesroom, 16 Bay St., New York.
SEND FOR ILLUSTRATED CIRCULAR AND PRICE-LIST.

JARVIS PATENT FURNACE FOR SETTING STEAM BOILERS.



Economy of Fuel, with increased capacity of Steam Power. Like the Siemens Process of Making Steel, it utilizes the waste gases with hot air on top of the fire. Will burn all kinds of waste fuel without a blast, including Black Coal, Sawdust, Logwood Chips, &c. Send for Circulars.

Jarvis Engineering Co.,

A. F. UPTON, Treas. and Gen'l Manager,
61 Oliver St., Boston, Mass.

JOSHUA C. COE, Agent for Maryland and Virginia,
O'Donald's Wharf, Baltimore, Md.

SOUTHERN REFERENCES:

Eagle & Phenix Mfg. Company, Columbus, Ga.
Anniston Mfg. Co., Anniston Ala.
J. P. King Mfg. Co., Augusta, Ga.
Rose Mining Co., Charleston, S. C.
Maryland Pavement Co., Baltimore, Md.
Brush Electric Light Co., Baltimore, Md.
Ettrick, Matton and Battersea Mfg. Co's.,
Petersburg, Va.
Rasin Fertilizing Co., Baltimore, Md.
Tanner & Delaney Engine Co., Richmond, Va.
Sibley Mills, Augusta, Ga.

Graniteville Mfg. Co., Graniteville, S. C.
Charleston Bagging Co., Charleston, S. C.
P. H. Mayo & Bros., Richmond, Va.
Phosphate Mining Co., Beaufort, S. C.
Brush Swan Electric Light Co., Norfolk, Va.
Columbus Ice & Refrigerator Co., Colum-
bus, Ga.
Lenoir Manufacturing Co., Lenoir, East
Tennessee.
Vanceuse Mill, Graniteville, S. C.

PHOSPHOR-BRONZE



The celebrated alloys in Wire, Rods, Sheets, Bolts,
Wire Ropes, Wire Cloth, Castings, Ingots, etc.
Pamphlets and particulars on application to

THE PHOSPHOR-BRONZE SMELTING CO., Limited.

No. 512 ARCH STREET, PHILADELPHIA, PA.
Owners of the U. S. Phosphor-Bronze Patents.
Sole Manufacturers of Phosphor-Bronze in the United States.

HOOPES & TOWNSEND,

MANUFACTURERS,

PHILADELPHIA, PA.



KEYSTONE BOILER RIVETS.

Cold-Punched Square and Hexagon Nuts.

Finished and Case-Hardened Steel Hexagon Nuts

BRIDGE RODS AND RIVETS.

BUILDERS' IRON WORK.

TANK AND COOPERS' RIVETS.

IMPROVED HOISTING ENGINES

—WITH—

WIRE-ROPE DRUMS

AND
SAFETY BRAKES.

SPECIALLY ADAPTED TO

Mining & Interests.

MANUFACTURED BY THE

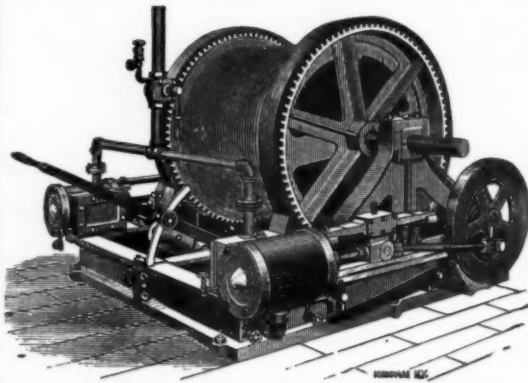
Lidgerwood Mfg. Co.

96 Liberty St., N. Y.

Hoisting Engines for all purposes.

MORTON, REED & CO., Agts.

59 & 61 German St., Baltimore.

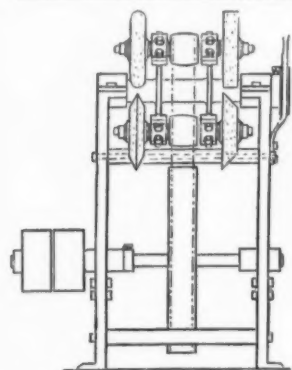
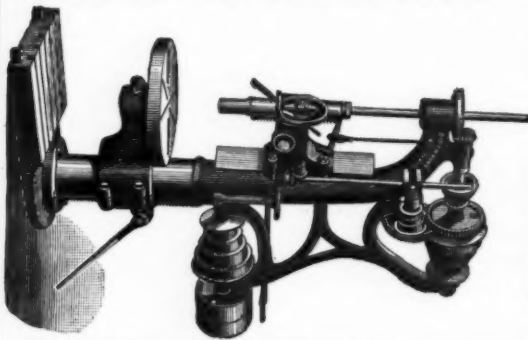


POND MACHINE TOOL CO.

MANUFACTURERS OF

Iron-Working
Machinery,
WORCESTER, MASS.

Special Railroad Tools, Lathes,
Planers, Upright and Radial Drills,
Boring Mills, Gear Cutters, Mill-
ing Machines, Patent Shafting
Lathes, Hand Punches and Shears,
Planer Chucks. Special machinery
in great variety. Estimates fur-
nished. Send for catalogue.



BLAISDELL'S
Eight Wheel Emery Machine,

FOR GRINDING
ALL KINDS OF IRREGULAR CUTTERS.



J. H. BLAISDELL, Manufacturer of WOOD-WORKING MACHINERY.

SPECIAL ATTENTION GIVEN TO REPAIRING.

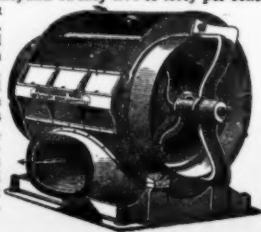
Office and Factory, 550 & 552 W. 25th Street, New York.

THE MACKENZIE PATENT CUPOLA AND BLOWER

Send for Circular to SMITH & SAYRE MFG. CO., Proprietors, 245 Broadway, N. Y.



This Cupola has made a great revolution in melting iron. It differs from all others in having a CONTINUOUS TUYERE, or in other words, the blast enters the fuel at all points. Above one ton capacity per hour, they are made oval in form. This brings the blast to the center of the furnace with the least resistance and smallest possible amount of power, and in combination with the continuous Tuyere causes complete diffusion of the air throughout the furnace, and uniform temperature, melting ten or fifteen tons an hour with the pressure of blast required to melt two or three tons in an ordinary Cupola. It also enables us to save very largely in time and fuel, the experience of our customers showing a gain of twenty-five to fifty per cent. in time, and twenty-five to forty per cent. fuel over the ordinary Cupola, and a BETTER QUALITY OF CASTING, especially in light work. This is due to the thorough diffusion of the air and more perfect combustion, extracting less carbon from the iron, making a softer and tougher casting. We manufacture these Cupolas of any desired capacity, numbered from 1 to 20, inclusive, the numbers indicating the melting capacities in TONS PER HOUR—No. 1, one ton; No. 2, two tons; No. 3, three tons per hour, and so on up to 15, or 20 tons. We have improved the construction of these Cupolas in every way, have increased their strength and durability, and sought to make them as convenient for working and repairs as our own and the experience of our customers could suggest.



Covert

Manuf'g Company

WEST TROY, N. Y.

Manufacturers of COVERT'S Celebrated Harness Snaps, Swivel Snaps, Open Eye Bit and Chain Snaps, Snap and Thimble for Horse and Cattle Ties: ROPE GOODS,

consisting of Web and Rope, Halters, Rope Horse and Cattle Ties, Web Horse Ties, Halter Leads, Driving Reins, Weight Cords, Hammock Ropes, Hitching Cords, Lariat Tethers and Picket Pins. Also, Leather Horse Ties, Etc. Breast Chains, Heel Chains, Chain Cow Ties, Halter Chains, Martingale Chains, Rein Chains, Post Chains, Butt Chains, Back or Cart Chains, Log Chains, Stake Chains, Trace Chains. Also, STUD, CABLE AND COIL CHAIN. CHAINS OF ALL KINDS MADE FROM SAMPLE OR DRAWING.

PATENT ADJUSTABLE SOLDERING IRONS.

Send for Illu-
strated Catalogue
and Price-List.

CHATTANOOGA FOUNDRY & PIPE WORKS.

D. GILES, Prest. C. B. IBESTER, Vice-Prest. M. LLEWELLYN, Secy. GEO. E. DOWNING, Treas.
Successors to D. GILES & CO., Chattanooga, Tenn., Manufacturers of



Also Castings and Pat-
terns of Every Descrip-
tion made to order,

The Manufacturers' Record, THE "HERCULES"

A WEEKLY PAPER,

Devoted to the Industrial Interests of the Southern States, having for its aim the Upbuilding of Southern Manufactures, and the Development of the Material Resources of the South.

BIGSBY & EDMONDS, Publishers, Baltimore.

Below are a few extracts from recent issues of Southern papers, showing the estimation in which the MANUFACTURERS' RECORD is held by those best capable of judging of the value of its work:

THE BALTIMORE MANUFACTURERS' RECORD has been doing a valuable work for the South in making a specialty of reporting Southern progress. No paper in the Union has more entitled itself to Southern gratitude than this enterprising and reliable journal. The RECORD has come to be a standard of authority in the matter of Southern advancement. Its labor has been remarkable in this work, and its care and accuracy phenomenal. As it has progressed in popular esteem, a few have endeavored to discredit its work. But all attempts have simply riveted it more strongly in public esteem. The recent publication in its issue of April 11th, of the development of the industrial interests of the South, has attracted general attention. The fine aggregate of \$20,591,000 of new capital invested in manufacturing is given. The figures, if possible, fall short of the mark, rather than overstate it. In getting up this valuable and accurate information, the editors of the RECORD underwent the enormous trouble of writing between 1,500 and 2,000 letters and postal cards. No journal has done more to bring Southern resources to Northern observation. Let our Southern press uphold the RECORD in its good labor. It has conferred an incalculable benefit upon our section.—*Chronicle and Constitutionalist*, Augusta, Ga.

Is doing a wonderful work for the South.—*Owensboro (Ky.) Messenger*.

The leading journal of its class in this country.—*Elkton (Md.) Whig*.

Our leading manufacturing organ of the South.—*Beaumont (Tex.) Enterprise*.

THE BALTIMORE MANUFACTURERS' RECORD is almost a real necessity to every live Southern manufacturer and would prove of value to every intelligent Southern man. It is devoted exclusively to the industrial development of the South, but is the most complete and reliable paper of the kind published anywhere. It is the only technical journal of which we know that, without being what is known by the stereotyped adjective "popular," is of real interest to the general reader.—*Shelby, N. C., New Era*.

Is accomplishing a work of inestimable value to our section of the country. There is no other journal in the country which contains so much valuable and thoroughly reliable information about the South. It has thrown itself heart and soul into the great and good work in which it is engaged, and has been a powerful factor in inaugurating and helping forward the march of Southern progress.—*Farmville (Va.) Journal*.

No more welcome journal, or one whose columns we take more pleasure in scanning, finds its way to our office than the MANUFACTURERS' RECORD, of Baltimore. * * * We would be gratified if some of our residents would read it long enough to become imbued with the spirit of progress its columns unfold, and then put the lessons they learn to practical use in our midst.—*Herald*, Claremont, Va.

No journal published in this country that shows more real interest in the development of the South in all its industries. It is always welcomed in our sanctum as the champion of Southern enterprise, and we find it is extensively quoted and more highly commended by the Southern press than any other trade paper in the Union.—*Citizen*, Canton, Miss.

PUBLISHES every week probably more information relative to Southern manufacturing, mining and railroad affairs than can be gathered from any other single source. It has in many ways contributed largely to the material development of the South, and deserves a wide circulation throughout the Southern States.—*Charleston, S. C., News and Courier*.

HAS closely and faithfully chronicled Southern industrial progress, and devotes itself with commendable zeal to the development of all the material resources of our section. It deserves the liberal encouragement of our people.—*Rosnoke (Va.) Leader*.

Its editors have discernment enough to see that there is a bigger boom in store for this section than has yet been forecast, and it has labored zealously in aiding to unfold its resources.—*Daily Review*, Wilmington, N. C.

A well got up, lively and enterprising journal like the MANUFACTURERS' RECORD is just the right thing in the right place. No manufacturer, business man, or, in fact, anyone interested in the progress of the South, should be without it.—*The Commercial*, Newport News.

The leading journal of its class in this country. Doing an excellent work through its close attention to all indications of industrial progress in the South. Recently it has secured a number of correspondents in Kentucky.—*Louisville, Ky., Daily Commercial*.

THE BALTIMORE MANUFACTURERS' RECORD is one of the ablest industrial journals in the country.—*Atlanta (Ga.) Constitution*.

One of the best papers published in the United States for the accomplishment of the purpose to which it is devoted. It has done more to build up railroads, manufacturing and mining interests in the Southern States than all other instrumentalities combined, and deserves and should receive the liberal support of the Southern people. It is ably edited, valuable for its exhaustive statistical record of Southern industries and enterprises, finely printed and illustrated, and is worth ten times its subscription price to every mechanic, merchant and manufacturer in the Southern States. It has a large corps of able and pains-taking contributors in the Southern States, and gathers up all the material facts. We find it invaluable in giving us much useful information about the South, of which we would know nothing without the MANUFACTURERS' RECORD.—*Commercial*, Pensacola, Fla.

Interesting, trustworthy and thorough. Has in many ways contributed to the material development of the South, and deserves a wide circulation throughout the South.—*Huntsville (Ala.) Mercury*.

THE BALTIMORE MANUFACTURERS' RECORD is authority on all new enterprises in the South.—*Anniston (Ala.) Watchman*.

The leading journal of its class in this country. It is devoted exclusively to Southern material advancement, and each week contains a list of all new Southern industries. Its editorials are sound and readable.—*Charlottesville (Va.) Chronicle*.

ONE of the most welcome papers that comes to our office. It is devoted to the material prosperity of the South. Probably it has done more than any other paper for the material development and advancement of the South.—*Weekly*, Franklinton, N. C.

DOING a good work for the Southern States. It deserves the encouragement of all our business men.—*Times-Union*, Jacksonville, Fla.

One of the most interesting and useful journals that come to our table. It is the best source of information in regard to the progress of the industries of the South that we have in the country.—*Natchez (Miss.) Democrat*.

THE MANUFACTURERS' RECORD, of Baltimore, is doing a good work for the South.—*Dispatch*, Lexington, N. C.

A PUBLICATION that commends itself to every thoughtful, progressive Southern man. A complete synopsis of the development of all the industries of the South, presented in choice English and on most substantial facts. It is a weekly encyclopedia of Southern interests in all their varied ramifications.—*Sentinel*, Grenada, Miss.

THE MANUFACTURERS' RECORD is doing all in its power to advance the development of the material resources of the South. It deserves the assistance of every Southern journal and liberal patronage from our tradesmen. Its articles, always progressive, are well calculated to draw attention to our vast fields of undeveloped wealth, and its columns are perhaps more frequently quoted from than those of any paper of the kind published anywhere. The paper supplies a long-felt need in bringing facts with regard to the South before the people of the North and West.—*Wytheville (Va.) Enterprise*.

RANKS among the industrial papers of the country. Its weekly articles on Southern industrial progress are able, interesting and reliable.—*American Lumberman*, New Orleans, La.

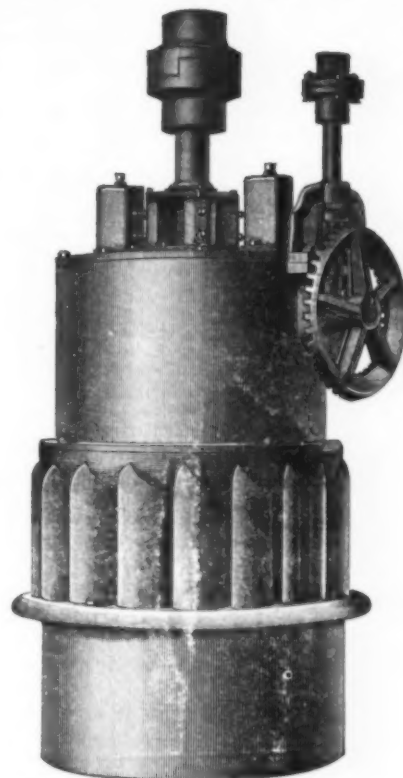
THE South is rapidly growing in wealth and material prosperity, and its manufacturing interests are being largely developed. There are various reasons why this is so. Its great mineral resources, salubrious climate, are prime motors in this direction, but to no outside influence is so much due as to the MANUFACTURERS' RECORD.—*Havre-de-Grace (Md.) Republican*.

Its statistics have not been successfully contradicted, although mildly doubted by the small section of the press that still lacks capacity to realize what a vigorous, virile worker and producer the giant young New South is.—*Times Democrat*, New Orleans, La.

ONE of the ablest and most earnest workers for the development of the industries of the South.—*New River Bulletin*, New River, Va.

AN energetic exponent of the marvellous resources of our section and its industrial enterprise, and has wide-spread circulation.—*The News*, Fredericksburg, Va.

THE MANUFACTURERS' RECORD has done more to build up Southern interests than any other paper of the South.—*Carthage (Tenn.) Mirror*.



→ GET THE BEST. ←

A good Water Wheel increases the value of your whole plant. Get the best at first and avoid the expense and delay of changing wheels. A good wheel will serve you well for twenty years. The best is the cheapest—it does more work, lasts longer, and costs no more for gears and setting than a common wheel. The HERCULES gives the most power for its size, and the highest average percentage from full to one-half gate, of any wheel ever made.

SEND FOR CATALOGUE No. 3.

HOLYOKE MACHINE CO., WORCESTER, MASS.

Wheels Now in Use in Holyoke, February 1st, 1885.

Name of Wheel.	Number.	Horse-Power Furnished.
Hercules.....	53	10,576
Boyden.....	38	5,398
American.....	10	825
Tyler.....	10	311
Hunt, Waite & Flint.....	7	375
Rifflon.....	6	440
Jonval.....	4	655
Swain.....	1	160
New American.....	1	65
Aoustin.....	1	75
Victor.....	2	150
Total.....	133	19,030

EAGLE & PHENIX MANUFACTURING CO.,

COLUMBUS, GA., Feb. 25, 1885.

HOLYOKE MACHINE CO., STEPHEN HOLMAN, Treas.

Dear Sirs—Within the past four years I have ordered four "Hercules" wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a "Hercules" wheel has been added each time a new wheel was wanted. In Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The "Hercules" is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal, mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon. Yours truly, JOHN HILL.

CONNECTICUT RIVER PULP MILL,

HOLYOKE MACHINE CO.: HOLYOKE, MASS., November 24, 1884.

We are now using 22 "Hercules" wheels, under heads from 12 to 40 feet, and they have always given satisfaction. We have used a variety of Turbines, but where economy in the use of water is required nothing equals the "Hercules." In every respect they are first class.

D. H. & J. C. NEWTON.

GEORGE R. DICKINSON PAPER CO.,

HOLYOKE MACHINE CO.: HOLYOKE, MASS., December 17, 1884.

Gentlemen—We started our mill with three "Hercules" wheels. We raise the gates Monday morning and close them Saturday night. They have never cost us a cent for repairs nor caused us a moment's delay. We want nothing better. Yours very truly, GEORGE R. DICKINSON, Treas.

The Fruits of Protection.

The following is from a letter from the American Iron and Steel Association, in reply to a circular letter dated July 17, 1885, from Hon. Daniel Manning, Secretary of the Treasury:

The statesmen of this country cannot afford to misunderstand the elements of our national prosperity. Chief among these is our protective policy. Protection has done a great work for the people of this country during the past 25 years, and we are glad to be able to say that this fact is now generally recognized and appreciated, even by our industrial rivals in other countries. It is admitted by all except mere theorists that protection aids in the development of all the resources of the country; that it stimulates the investment of capital; that it gives steady employment to our own people; that it cheapens the cost of manufactured products while enhancing the wages of labor; that it cheapens the cost of transportation; that it furnishes a home market, and therefore a sure market, for much the larger part of our agricultural products; and, finally, that it keeps at home and in circulation large sums of money that would otherwise be sent abroad. This is what protection for the sake of protection does for us directly; incidentally it furnishes revenue to the government through the duties collected on foreign commodities. A tariff for revenue only might furnish the same amount of revenue, but it would not insure steady employment to the people nor produce any of the other benefits which protection brings. The tariffs of 1846 and 1857 were purely revenue tariffs. While they were in operation no domestic industry prospered as it has since prospered under our protective policy. But for the Irish famine, the discovery of gold in California and the Crimean war, the 15 years during which these tariffs were in operation would have been years of much greater industrial distress in our country than they were. That period in our history ended with the inability of the government to pay its ordinary expenses; it was forced to become a borrower at usurious rates of interest. The country was then at peace. Under the Morrill protective tariff and its various supplements down to the present time the country's industrial life has not only been remarkably quickened, but the government revenue from duties on imports has greatly increased. Never since the world began have the industries of any country been so wonderfully developed in a brief time as the industries of this country have been during the quarter of a century which has elapsed since the passage of the Morrill tariff in 1861.

Nevertheless, the assertion is sometimes made that a protective tariff is a tax on consumers, because it increases the cost of articles the manufacture of which is protected against injurious foreign competition. Those who make this assertion ignore the benefits of protection to which we have alluded, and they ignore also the price-lists and market quotations in recent years, when the inflation of values caused by the expansion of the currency as an incident of our civil war had passed away. The following table will show that protection, instead of being a tax on consumers, has cheapened the price to them of leading manufactured articles of iron and steel since the break in 1873 of the inflated prices which the financial legislation of the war period had created. The prices we give embrace the revenue tariff period already alluded to and the protective tariff period which was ushered in by the Morrill tariff of 1861. These prices are yearly averages for No. 1 anthracite foundry pig iron, best refined bar iron and iron rails, all per gross ton, at Philadelphia; nails, per keg, wholesale, at Philadelphia, and steel rails, per gross ton, at Pennsylvania mills:

REVENUE PRICES.				
Years.	Pig iron.	Bar iron.	Iron rails.	Cut nails.
1846.....	\$27 $\frac{1}{2}$	\$31.66
1847.....	28 $\frac{1}{2}$	36.04
1848.....	29 $\frac{1}{2}$	39.33
1849.....	29 $\frac{1}{2}$	37.50	53 $\frac{1}{2}$	4.00
1850.....	29 $\frac{1}{2}$	39.54	47 $\frac{1}{2}$	3.65
1851.....	29 $\frac{1}{2}$	34.66	45 $\frac{1}{2}$	3.30
1852.....	29 $\frac{1}{2}$	38.79	48 $\frac{1}{2}$	3.08
1853.....	30 $\frac{1}{2}$	33.50	77 $\frac{1}{2}$	4.50
1854.....	30 $\frac{1}{2}$	31.33	80 $\frac{1}{2}$	4.60
1855.....	27 $\frac{1}{2}$	74.58	62 $\frac{1}{2}$	4.10
1856.....	27 $\frac{1}{2}$	73.73	64 $\frac{1}{2}$	3.94
1857.....	26 $\frac{1}{2}$	71.04	64 $\frac{1}{2}$	3.72
1858.....	23 $\frac{1}{2}$	62.29	50	3.50
1859.....	23 $\frac{1}{2}$	60.00	49 $\frac{1}{2}$	3.96
1860.....	23 $\frac{1}{2}$	58.75	48	3.13
Average.....	\$26 $\frac{1}{2}$	\$71.52	\$58 $\frac{1}{2}$	\$3.87

These figures show that pig iron, bar iron and nails have been cheaper under protection than under a revenue policy, and that steel rails have been sold under protection at much cheaper prices than iron rails were sold under a revenue tariff. Yet we do not contend for cheapness as the most desirable result of the protective policy. Steady employment of the people, good wages, general prosperity and the ability to consume the products of industry are of far more importance.

The charge has also been made that protection is especially a tax upon the farmers, because, by increasing the cost of railroad materials, it increases the cost of transporting agricultural products to market. That this charge is also made without reference to the facts is shown in the prices of steel rails already given, and by the following table of average freight charges per bushel for the transportation of wheat, a representative product, from Chicago to New York from 1868 to 1884. This table was compiled by the Hon. Joseph Nimmo, Jr., late Chief of the Bureau of Statistics:

Years.	By lake and canal. Cents.	By lake and rail. Cents.	By all rail. Cents.
1868.....	24.54	29.0	49.6
1869.....	23.12	25.0	35.1
1870.....	17.10	22.0	33.3
1871.....	20.74	25.0	31.0
1872.....	24.50	28.0	33.5
1873.....	19.19	26.9	33.2
1874.....	14.10	16.9	28.7
1875.....	11.43	14.6	24.1
1876.....	9.58	11.8	16.5
1877.....	11.24	15.8	20.3
1878.....	9.15	11.4	17.7
1879.....	11.60	13.3	17.3
1880.....	12.27	15.7	19.7
1881.....	8.19	10.4	14.4
1882.....	7.89	10.9	14.6
1883.....	8.40	11.5	16.5
1884, Jan. to Sept.....	6.60	9.75	13.0

Quotations are wanting for 1885.

It is shown by this table that since 1868, when the statistics commence, the freight on wheat from Chicago to New York has steadily and rapidly declined. The railroad companies have largely been enabled to reduce their rates of freight, because protection, by encouraging domestic competition in the manufacture of steel rails, and in the manufacture of iron and other articles entering into the construction of cars and locomotives, has cheapened the cost of building and equipping railroads, and because the use of cheap steel rails, which protection alone had made possible, has largely increased the carrying capacity of the railroads without correspondingly adding to their operating expenses. The competition of the railroads compelled a reduction of freight rates by lake and canal. Protection therefore has not hindered, but has greatly helped the farmers to send their products to market.

SHALL THE TARIFF OF 1883 BE REVISED?

We now come to consider the practical question involved in the suggestion from unofficial sources that the present tariff requires general revision. If our protective policy has been productive of only beneficial results to all the people of our country, and if these results are generally conceded, why should any reduction of duties be proposed

in any quarter? First, because it is alleged that many duties in the present tariff are excessive, and therefore burdensome; and second, because it is alleged that the tariff as a whole is productive of too much revenue, and that the surplus revenue should be reduced in the interest of good government, as well as to relieve the people of unnecessary taxation. These reasons for precipitating another tariff agitation upon the country will be briefly examined.

We know of few duties in our present tariff that are higher than are needed for the protection of domestic industries, while, as we have shown, there are several rates of duty in the metal schedule that are wholly inadequate for the protection of our iron and steel industries and for the protection of the government revenue. It is noticeable and significant that such demand as now exists for another revision of the tariff comes mainly from those who desire a still further reduction of duties than was accomplished in 1883, and who express no anxiety whatever concerning an increase of duties which would tend to restrict the importation of foreign goods.

No existing duty which has built up a useful American industry is too high. If a protective duty has enlisted capital, employed labor, promoted competition, reduced prices, contributed to our industrial independence, and restricted the drain of the precious metals to Europe to pay for the products of foreign capital and labor, it should not be repealed or reduced the moment it has accomplished these beneficial results. So long as it remains on the statute book it can harm no American interest; the competition which it has created will guard consumers against unreasonable prices; but repeal or reduce it and the industry which it has established is at once placed in jeopardy, the capital invested in it loses its sense of security, activity is succeeded by lethargy, and consumers are soon confronted with advancing prices, the benefit of which the foreigner receives. Our experience under the compromise tariff of 1833 and the revenue tariffs of 1846 and 1857 proves the correctness of these statements. The compromise tariff of 1833, which succeeded the protective tariffs of 1824 and 1828, kept all the industries of the country in a dying condition for many years before its repeal; the tariffs of 1846 and 1857 conspicuously retarded the development of our iron industry. In a few years after the passage of the tariff of 1846 our iron-rail industry, which had been literally brought into existence by the protective tariff of 1842, was dead. The withdrawal of protection after it has once been granted has frequently injured the industries of this country fully as much as the failure to grant it when needed.

Why should a duty which has rendered the country a real service be repealed or reduced, unless it is intended that the foreign manufacturer shall thereby secure more ready access to our markets? If experience shows that it has harmed no person but this foreign manufacturer, why should any loyal American agree to surrender one hair's breadth of its patriotic provisions? If the duty on pig iron, for instance, has secured a home supply of every quality needed, and at lower prices than were ever known under a revenue tariff, why should the duty now be reduced, when one of the certain effects would be to stop many American furnaces? If the duty on steel rails has reduced their price to the owners of American railroads below the lowest price they ever paid for inferior iron rails, why should it now be reduced, when the only effect would be to enable the foreign manufacturer of steel rails to re-enter the American market, from which our low prices have but recently driven him? What obligation rests on the people or the government of this country to foster the manufactures of other countries and neglect their own?

But we are told that present duties yield too much revenue, and that they should be reduced 20 per cent. or more for this reason alone if for no other. Adopt the policy of

a sweeping reduction for the reason stated, and there would follow a certain increase of importations, with the possible absurd consequence of an increase, instead of a decrease, of revenue. Low duties would encourage importations for a time, until our people, through lack of profitable employment, would be unable to buy the products of either foreign or domestic industry. Then the revenue would surely decline, as it did under the revenue tariff of 1857. We can in this way reach a reduction of the revenue through the impoverishment of the people. This cannot be what the advocates of another revision of the tariff desire. A more humane and patriotic way to reduce the revenue would be to increase the duties, and thus check importations.

Those who have the most to say about our surplus revenue have apparently failed to notice the fact that the receipts of the government from both customs duties and internal taxes have greatly declined within the last two years. We have not before us all the statistics that we would be glad to present in this connection, but we give the following statement of the receipts and expenditures of the treasury for the two fiscal years which ended on the 30th of June last:

Receipts.		
	1885.	1884.
Customs.....	\$181,471,339	\$195,067,490
Internal revenue.....	112,498,725	121,586,073
Miscellaneous.....	29,720,642	31,866,308
Totals.....	\$323,690,706	\$348,519,871
Expenditures.		
	1885.	1884.
Ordinary.....	\$152,738,412	\$134,118,638
Pensions.....	56,102,267	54,429,228
Interest.....	51,386,256	55,578,378
Totals.....	\$260,226,935	\$244,126,244

This statement shows that the receipts declined \$24,829,165 in the last year, while the expenditures increased \$16,100,691 in the same year, making a total loss to the treasury of nearly \$41,000,000 in the last year as compared with its predecessor. In the first of the two fiscal years mentioned the surplus of receipts over expenditures was \$104,393,627, but in the last year it was only \$63,463,771. That the receipts will be still less in the present fiscal year, which commenced on the 1st of July last, than in the preceding fiscal year is rendered certain by the decline which has already taken place, and that the surplus revenue will also be less is equally certain. It would seem that there is not likely to be very much surplus to worry about in the near future.

But even if there should appear to be a reasonable prospect that the present tariff and the present internal revenue laws will yield a surplus revenue of several millions from year to year if they are not amended, is there no better way of reducing this surplus than by making a present of it to foreign manufacturers by a reduction of duties? Could not our own people be more wisely and patriotically relieved of that portion of the internal taxes which is derived from tobacco, and in this way relieve the treasury of its surplus revenue? But better still, why not use the surplus in improving our sea-coast defenses, in building the navy that is so sorely needed, in making guns and armor-plate that will be in accord with the military progress of the times, and in extending government aid in the establishment of steamship lines which would carry the United States mail to foreign countries and carry the products of American industry to foreign markets, from which we are now debarred by the more vigorous policy of foreign governments? To give our surplus revenue to foreigners under any circumstances, but especially when there is so much to be done to strengthen our defenses against possible foreign enemies and to increase our commerce with foreign countries, is madness.

* * * Our present tariff is a new tariff, less than three years old, and we know of no good reason why it should be revised, as is proposed, from beginning to end. That some of its provisions are injurious to our own people, and should be corrected so as to secure needed protection, we have pointed out, but so great is the danger to be apprehended

from a general revision that we nevertheless strongly object to this revision being undertaken at this time. We do not lack faith in the intelligence or the patriotism of Congress, but we know from sore experience how impossible it is for Congress, with many important questions pressing for its consideration, to give to the details of a tariff bill the time and attention that are absolutely necessary if great interests are not to be overlooked and great errors committed. We especially deprecate a reopening of the tariff question at the present time, when the industries of the country are beginning to revive from a protracted period of depression, brought about by world-wide causes and common to all manufacturing countries. Agitation of the tariff question, when accompanied by the threat of a reduction of duties, is always a cause of business disturbance, but it is particularly so at a time like this, when employers and their workmen have just passed through a most trying ordeal, and are beginning to see the sub-

with perpetual-motion machines, and similar impossibilities.

The desirability of such a machine is at once apparent to all bookbinders and stationers, and others of that class of trade, as evidenced by the success of the wire-stitching machines, which mode of holding a number of sheets together has been adopted in a majority of cases, because, when stitched with thread by hand, the girls will not tie a knot that cannot be drawn out by a slight pull. With this machine, this objection is overcome, and added to the great speed obtained, puts a thread-stitched pamphlet, with a hard, square knot, in active competition with the speed attained by the wire-stitching machines.

It runs at the rate of 48 stitches complete per minute, and its capacity per day ranges from 10,000 to 20,000, according to the class of work and ability of the operator.

As a machine, it also has some very ingenious points, all tending toward simplification. As an engineer expressed himself,

though the needles do not require threading as in the sewing machine. In this machine, for ordinary work, three needles are used, and what serves the purpose of a shuttle.

Machines are already in practical operation in New York City, Hartford and Boston. Frank L. Montague is general agent; office, 113 Fulton street, N. Y.

A DISPATCH from Pittsburg says: "An improvement has been made on the Bessemer steel process at the Edgar Thompson Steel Works, which, it is said, will have the effect of making Bessemer steel equal in quality to crucible steel, while it will cost only about one-tenth of the price. The change consists in the thorough mixing of spiegel iron with molten iron in the ladle, so as to uniformly carbonize it. Bessemer steel can be produced at a cost of a cent to a cent and a half per pound, while that made in a crucible costs, at least, eleven cents per pound."

TRADE NOTES.

Steam Pumps.

Attention is directed to the advertisement in this issue of Wheeler and Tappan, manufacturers of steam pumps and engines at 49, 51 and 53 N. Jefferson street, Chicago.

The pumps manufactured by this concern are designed for any duty and they make any size or required kind of pump to order; but have the following line in stock: standard steam fire pumps, marine pumps, distillery pumps, quarry pumps, low-pressure pumps, hydraulic pressure pumps (new pattern), brewery pumps, tannery pumps, gas works pumps, air pumps, sugar house pumps, oil refinery pumps, water works pumps, circulating pumps, bilge pumps, starch pumps, drainage pumps, etc.

They make a specialty of brewers' and mining pumps.

These pumps are similar in construction to the celebrated "Knowles Pumps," so popular everywhere.

Wheeler & Tappan claim the advantage of low prices, superior shipping facilities and workmanship unexcelled. They make every size and variety of pumps, and steam users will do well to correspond with them and compare their prices with those of other manufacturers before purchasing.

EVERY day there is some new evidence of the continued advancement of the South and of the rapidly growing importance of that section as a commercial as well as manufacturing area. Formerly a wholesale business in hardware exclusively was hardly to be considered except in some large commercial center, such as New Orleans, and such an enterprise would have been considered hazardous. Recently, however, a hardware house has been started in Chattanooga, Tenn., by Messrs. Howard, Ewing & Craigmiles, who believe that ample capital and experience will bring them success. They have erected a large 4-story brick building near the corner of 9th and Market streets, adjacent to the Union Depot, and which they have fitted up with all needed appliances, including elevators, &c. The building, though of large capacity, is entirely filled with a well assorted stock of hardware.

The firm of Howard & Ewing started a retail hardware business in Chattanooga some two or three years ago, and were remarkably successful. Thinking there was a good opening for a wholesale business, they formed a copartnership with Mr. Craigmiles, thus increasing their cash capital to \$71,000. They are all young men of energy and correct habits, and every way worthy the confidence of those whose trade they seek. We predict for them a successful career.

THE East Mississippi Insane Asylum, Meriden, Miss., have lately refitted their laundry, putting in the machinery built by the A. M. Dolph Co., Cincinnati.

Interesting to Laundries, Hotels and Owners of Large Homes.

The attention of the readers of the MANUFACTURERS' RECORD is directed to the advertisement of The A. M. Dolph Co., Cincinnati and Chicago, manufacturers of every description of laundry machinery and builders of laundries.

With their ample capital, long experience and thorough acquaintance with laundry operations and needs, they are able to supply all wants from the laundry outfit of a private residence to a complete laundry "plant" of a large hotel or public institution. Many of the large number of laundries recently started in the South were designed and fitted by this well-known concern. They are ready at all times to furnish drawings and estimates for a complete laundry plant, including engines, boilers, etc., etc., or any part of one. A handsomely illustrated catalogue, containing a full description of all machinery for laundry work, which has stood the test of experience, will be sent to the readers of the MANUFACTURERS' RECORD upon application. Correspondence is also solicited. Address The A. M. Dolph Co., Cincinnati, O., or 295 Wabash avenue, Chicago.

MESSRS. LOCKWOOD, GREENE & CO., mill engineers, of Providence, R. I., have recently made plans for a wool stock house, 202 feet long by 103 feet, 4 inches wide, two stories and basement, for the River side & Oswego Mills and they are now erecting the same at their Providence mills.

THE East Tennessee Insane Asylum, Knoxville, Tenn., is rapidly approaching completion. A complete laundry outfit for them, comprising a Rice automatic engine, metal washers, centrifugal extractor, steam mangle, &c., is being built by the A. M. Dolph Co., Cincinnati.

The Riverside & Oswego Mills, at Providence, R. I., are adding to their plant a three-story building 244 feet long by 69 feet, 4 inches wide, and in connection with same, a boiler house, engine house and chimney. Plans for the buildings and arrangement of power, shafting, etc., are being made by Lockwood, Greene & Co., mill engineers, Providence, R. I.

Important to Southerners.

Persons arriving in New York via Cortlandt Street Ferry, by taking the 6th Avenue Elevated Train, corner Church and Cortlandt streets, can reach the Grand Union Hotel in 42d street, opposite Grand Central Depot, in twenty minutes, and save \$3 carriage hire. If en route to Saratoga or other summer resorts via Grand Central Depot, all baggage will be transferred from hotel to this depot free. 600 elegantly furnished rooms, \$5 and upwards per day. Restaurant the best and cheapest in the city. Families can live better for less money at this hotel than at any other first-class hotel in the city. †

MILLWRIGHT AND ENGINEER,

Having had a thoroughly practical experience in various kinds of mill work and engineering, also a practical experience in the various departments of manufacturing machinery, is open for an engineering work, or erecting mills or general mill work.

W. W. ALLEN,

Address and refer to
LIDGERWOOD MANUFACTURING CO.,
96 LIBERTY STREET, NEW YORK.

ENGINES

Vertical and Horizontal
BOILERS OF ALL KINDS AND SIZES.

WE HAVE IN STORE SEVERAL

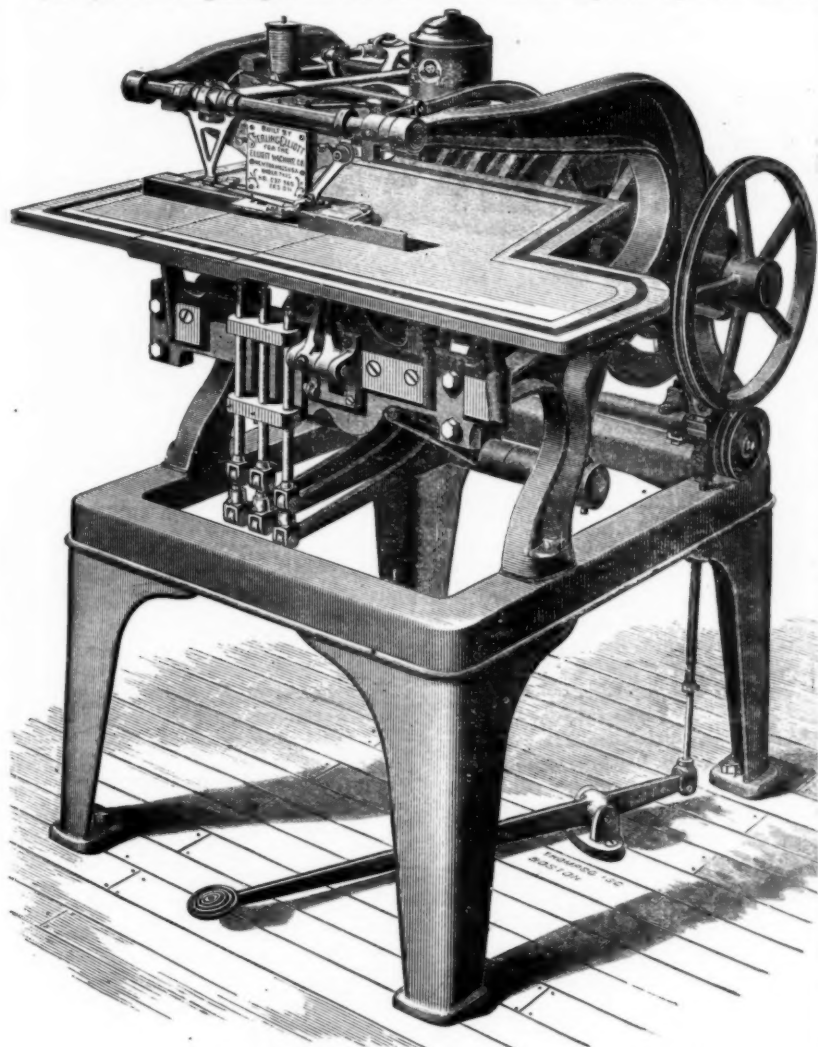
SECOND-HAND ENGINES
FOR SALE.

And if you want Low Estimates on NEW
ENGINES and BOILERS, Address,

JACKSON & TYLER,

16 & 18 S. Howard Street,
BALTIMORE.

Machinery, Tools and Supplies.



THE ELLIOTT STITCHER AND KNOT-TYING MACHINE.

stantial evidences of that improvement which they have long hoped for. To be confronted with the ghost of tariff revision and reduction at such a time is of itself a most unwelcome experience, but if for that ghost there shall be substituted the bones and flesh of a tariff bill proposing a general revision and reduction of duties, we hazard nothing in predicting that the effect on the business of the country will be simply disastrous.

The Elliott Stitcher and Knot-Tying Machine.

The accompanying engraving represents a thread-stitching and knot-tying machine, designed and invented by Sterling Elliott, of Newton, Mass., which we believe to be one of the most remarkable and ingenious machines of the kind yet brought out. In this machine the inventor has accomplished, in a simple and practical manner, what has heretofore been considered impracticable, viz., the tying of a square knot by machinery. Such machines have heretofore been classed

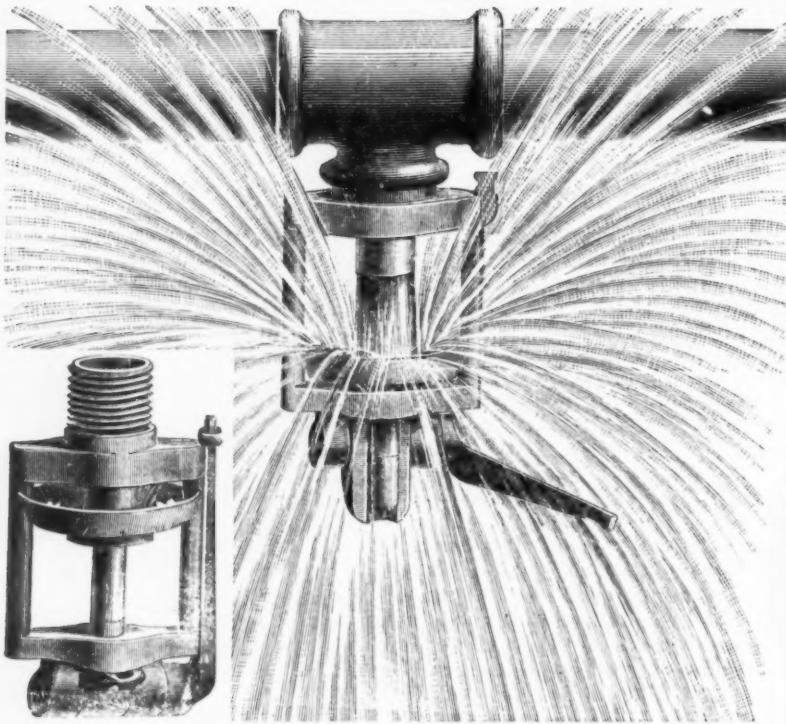
"It contains much omitted and nothing forgotten." It has only one shaft and no gears. Cams are all round and of same diameter outside; in fact, cast from one pattern. They are cut from the solid metal by special machines. The cams consist of a disk, backed up with six ribs or arms; the groove is cut entirely through the disk, leaving the cam rollers in plain sight from back of cam, and also enables the rollers and studs to be taken out without disturbing any other part of the machine.

All the connections are adjustable by screw arrangement, which is solid and cannot change or work loose, and yet may be adjusted to the 1-40th of an inch. This is of great usefulness as a means of adjustment in taking up any possible wear, and the saving it accomplishes in building a perfect machine is incalculable.

The machine makes a perfect stitch, ties a square knot and cuts off, all in one operation, with either linen, cotton or silk thread.

The operation of the machine is in some respects similar to that of a sewing machine,

WALWORTH Strong Sensitive Link Sprinkler.



THE WALWORTH STRONG SENSITIVE LINK SPRINKLER, for the extinguishment of fires, having for its most salient points

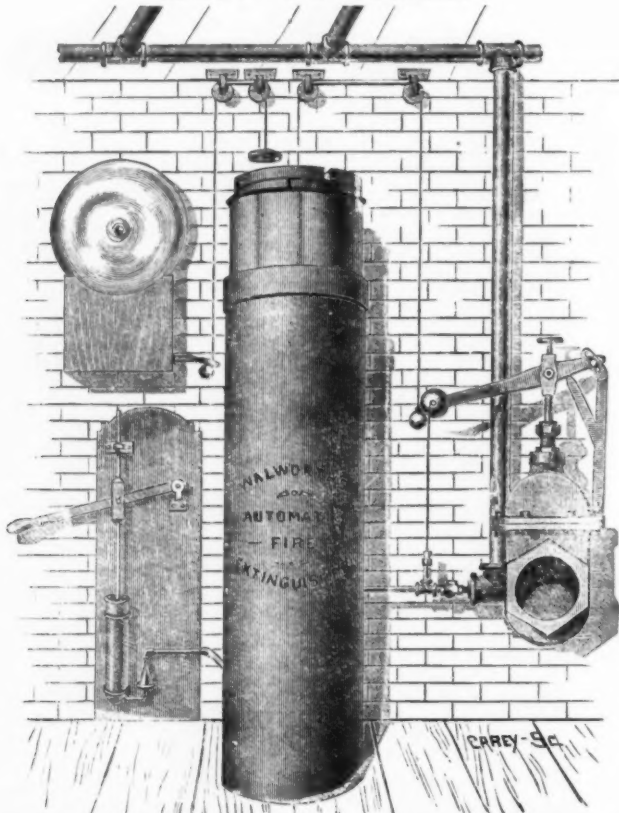
STRENGTH, SIMPLICITY AND RELIABILITY. has forced its way to the front solely because it has been proved to be the best Sprinkler made. No Sprinkler ever introduced has shown such good results. In no instance has it failed to act when needed, notwithstanding the fact that it has been ever tested in many instances.

We give below the account of a remarkable fire:

MESSRS. WALWORTH MANUFACTURING CO.:

GENTLEMEN—On Sunday evening fire was discovered in our engine room, and in five minutes had worked its way through a belt box to the fourth floor. For a few minutes it looked as if the place must go, but the automatic heads on each floor near the fire went off and quickly extinguished it without assistance from hose or anything else. Had there been sprinklers in the engine room, fire could not have got beyond it, and we will be pleased to have you put them in this room at your earliest convenience. After the fire was out we shut the water off at tanks, put on new rings at the eleven heads which had gone off, and with water on started in full next morning as though nothing unusual had taken place.

WALWORTH Automatic FIRE Extinguisher. DRY SYSTEM.



By this system the pipes are filled with compressed air under a pressure of one pound to the square inch. Attached to the pipes is an Airometer, the inner tank having a weight upon it of 100 pounds. This tank and weight is raised by the compressed air, and as soon as a Sprinkler is opened the pressure, being released, allows the tank and weight to fall, thus opening a valve and either starting the pump or releasing the water from tank or street mains. It is so arranged that an alarm will sound just before the valve is to be opened, notifying that there is a fire, or that more air must be pumped. The entire supply of air can be produced by a few strokes of the air pump. Manufactured by the

Walworth Manufacturing Co.

No. 16 Oliver Street, BOSTON.

JEWELL BELTING CO.

SUCCESSORS TO

P. JEWELL & SONS,



— MANUFACTURERS OF —

LEATHER * BELTING

— AND —

LACE LEATHER,

HARTFORD, CONN.

E. W. BLISS,

— MANUFACTURER OF —

Presses, Dies,

— AND —

SPECIAL * MACHINERY

FOR WORKING SHEET METAL.

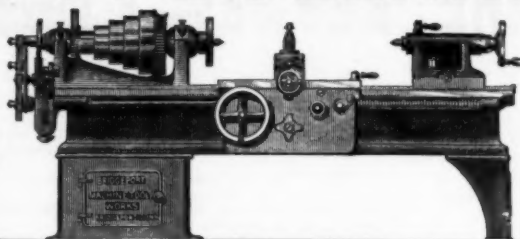


Double Seaming Machines, CIRCULAR SHEARS, Squaring Shears, Canning Machinery, &c.

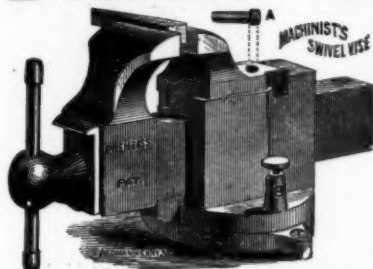
17 ADAMS ST., BROOKLYN, N. Y.

E. P. BULLARD,

Proprietor
Bridgeport
Machine Tool
WORKS.



14 DEY
STREET,
NEW
YORK.

IRON WORKING MACHINERY.**Prentiss' & Patent Vises.**

Adjustable Jaw.
Stationary or Pat. Swivel Bottoms
CANNOT GET OUT OF ORDER.
Cheapest and Best Vises for Railroad Shops, Ma-
chinists, Manufacturers, Mechanics, &c.



"Peerless" (Swivel Jaw) Pipe Grip.
Every Part Interchangeable.
CAN BE USED ON ANY VISE.

For Sale by the Trade.

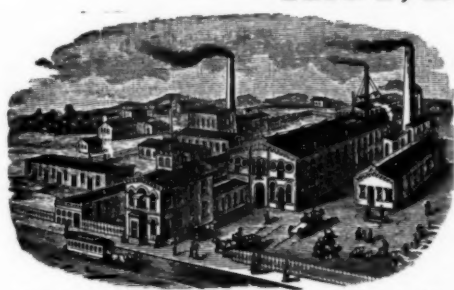
PRENTISS VISE CO., 23 Dey Street, NEW YORK, Sole Proprietors.

Ludlow Valve Manfg. Co.

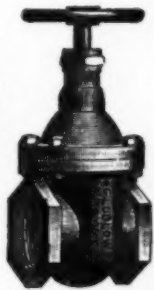
Office and Works:

938 to 954 River Street, and 67 to 83 Vail Avenue,

—TROY, N. Y.—



VALVES
Double and Single Gate, 1/4 inch to
48 inch, outside and inside
Screws, Indicators, etc., for
Gas, Water, Steam, Oil.
Send for Circular.



Also Fire Hydrants, Yard and Wash Hydrants, Check and Foot Valves.

J. STEVENS & CO.,

P. O. BOX 860.

Chicopee Falls, - Mass.,

MANUFACTURERS OF

Spring Caliper and Dividers,

FINE MACHINIST TOOLS
AND FIRE ARMS.

Our SHOOTING GALLERY RIFLE
IS THE FAVORITE EVERYWHERE.

SEND FOR ILLUSTRATED CATALOGUE.

**THE MIDVALE STEEL CO.**
TIRES and AXLES

OF EVERY DESCRIPTION.



TOOL-
AND
MACHINERY STEEL

STEEL.
SPRING AND GUN

CRUCIBLE AND OPEN HEARTH STEEL.

Works & Main Office:

Niagara, Philadelphia, Pa.

BRANCH OFFICE:

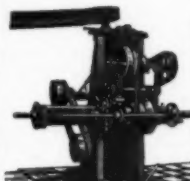
333 Walnut St., Philadelphia, Pa.

WM. SELLERS & CO.

PHILADELPHIA.

IRON AND STEEL-WORKING MACHINE TOOLS

For Railways, Machine Shops and Rolling Mills.



Shafting, Pulleys, Hangers, Couplings, &c.

Were the first parties to design and introduce the BALL and SOCKET
HANGERS, ADJUSTABLE COUPLINGS, and the system of selling Shafts,
Pulleys and Couplings by the piece. Will be pleased at any time to give estimates for work in place, in mills,
or at our works. Price-Lists and other information given when requested.

BACON Winding Engines,
Furnace Hoists,
Mine Hoists.

(With or without Boilers.)

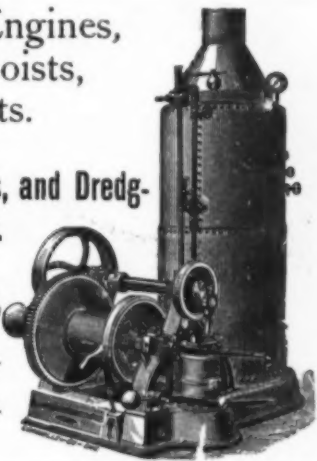
"Mining Plants," Concentrating Works, and Dredg-
ing Machinery Furnished Complete.

COPELAND & BACON,

85 Liberty Street, New York.

FAIRBANKS & CO., Agents, Philadelphia, Pa.
Pittsburgh, Pa.
Buffalo, N. Y.

References: Croton Magnetic Iron Mines, Brewster's, N. Y.
Crown Point Iron Co., Crown Point, N. Y.
Belvidere Iron Co., 22 Broadway, N. Y.
Sea Island Chemical Co., Beaufort, S. C.

**"STEAM"** A valuable book for every
Steam user and Engineer,

published for FREE DISTRIBUTION by

THE BABCOCK & WILCOX CO.,

Manufacturers of

WATER-TUBE BOILERS,

107 Hope St., GLASGOW.

39 Cortlandt St., NEW YORK.

**MACHINE * MOLDED
Cast Pulleys**

—Turned, Bored and Balanced.—

Also HANGERS, Every Description of COUPLINGS and SET COLLARS.

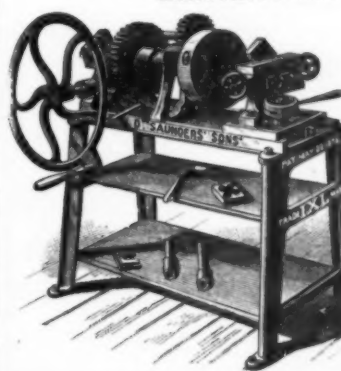
Send for Price List and Discounts.

Todds & Stanley Mill Furnishing Co.

Office and Factory, 917 N. 2d Street, ST. LOUIS.

**D. SAUNDERS' SONS,**

MANUFACTURERS OF THE ORIGINAL



TRADE **I.X.L.** MARK.

Pipe Cutting and
Threading Machine.

BEWARE OF IMITATIONS.
None genuine without our Trade
Mark and name. Also

Patent Wheel Pipe Cutter

STEAM AND GAS FITTERS'
HAND TOOLS,

Pipe Cutting and Threading Machine

For Pipe Mill Use a Specialty.
Send for Catalogue B.

YONKERS, N. Y.

**GOVERNORS** { For Water
Wheels } Cohoes Iron Foundry & Mch. Co.
Send for Catalogue. Cohoes, N. Y.

SAML. G. B. COOK & CO., HARDWARE

MANUFACTURERS' AGENTS
63, 65, 67 and 69 German St., BALTIMORE, MD.

AGENTS FOR

Buckthorn Fence Co.—Buckthorn Wire.
American Screw Co.—Screws, Rivets, Bolts, etc.
Branford Lock Works.
Boss Molasses Gates.
Carr & Crawley.—Shelf and Carriage Hardware.
Lancaster Bolt Co.—Eagle Carriage Bolts.
Lawson & Brenizer.—Hay and Manure Forks.
Meriden Britannia Co.—Rogers Bros.' A1 Plated Goods.
Northwestern Horse Nail Co.
Nicholson File Co.
Naugatuck Cutlery Co.
Globe Horse Nail Co.

Cowles Hardware Co.—Geers, Butts, Screw Drivers, etc.
H. Chapin's Sons.—Rules, Levels, Gauges, etc.
Clark Bros. & Co.—Bolts.
Essex Horse Nails.
A. Field & Sons.—Tacks, Finishing Nails, etc.
H. C. Hart Manufacturing Co.—Spring Butts, Screen Frames, etc.
Hubbard, Bakewell & Co.—Lippincott Axes, Saws, Shovels and Hoes.
Holroyd & Co.—Stocks and Dies.
Henry W. Kipp.—Hammers.
Klein, Logan & Co.—Picks, Mattocks, Sledges, etc.
Kimball's Patent Shovels and Spades.
Lockwood Steel Hoes.

Peck Bros. & Co.—Brass Cocks.
Payson Mfg. Co.—Building Hardware.
Patton Mfg. Co.—Enameled and Tin'd Hollow Ware.
Roy & Co.—Strap and T Hinges and Wrought Butts.
Saranac Horse Nail Co.
Scott Mfg. Co.—Peach and Apple Pearlers, etc.
George M. Scott.—Blacksmith Bellows.
Wilson's Mfg. Co.—Coffee Mills, Vises and Ship Hardware.
Walker's Horse and Mule Shoes.
International and Pimlico Brand of Horse Nails, Foreign and Domestic Hardware, Cutlery, Chains, Pistols, etc.



Improved Roller Bushed Iron Sheave.

BACNALL & LOUD BLOCK CO. BOSTON, MASS.

Manufacturers of the Latest Improved ROLLER BUSHED and GENUINE METALINE BUSHED and Iron Bushed Rope and Iron Strapped

TACKLE BLOCKS.

Send for the Celebrated
STAR BRAND



Improved Harcourt Patent.

Send for Catalogue
No. 1.



Improved Self-Locking Link Snatch Block.

DICKSON MANUFACTURING CO.

MAKERS OF CARLE MACHINERY FOR NEW YORK & BROOKLYN BRIDGE

LOCOMOTIVES FOR ALL KINDS OF SERVICE

BLAST ENGINES FOR IRON & STEEL WORKS

BESSEMER STEEL PLANT MACHINERY

SPRING PLATE STEEL TIRED CAR WHEELS. CAST CAR WHEELS. MINE CAR WHEELS.

STATIONARY ENGINES. HORIZONTAL & VERTICAL. SINGLE & IN PAIRS.

HIGH PRESSURE. CONDENSING & COMPOUND. HOISTING ENGINES.

CARRIAGES. DRUMS & MACHINERY.

COLLIERY MACHINERY.

COAL & PHOSPHATE BREAKERS WITH PATENT REMOVABLE STEEL TEETH.

SCREENS & VENTILATING FANS.

PUMPING ENGINES OF HIGH DUTY TYPES.

CORNISH PUMPING ENGINES. PUMPS. VALVES.

BOILERS OF EVERY KIND & SIZE.

HANGERS. SHAFTING & PULLEYS.

GEARS BOTH CAST & CUT.

HEAVY MACHINERY OF ALL KINDS

NEW YORK OFFICE 112 LIBERTY ST.

GENERAL OFFICE SCRANTON PA.

SOLE AMERICAN BUILDERS OF THE STOCKPORT GAS ENGINE, AND THE LIGHTFOOT DRY AIR REFRIGERATING ENGINE.

H. M. BOIES. PREST. W. H. PERKINS. SECT & TREAS. S. BROADBENT GEN'L SUPT. C. W. WATTS. M. E. D. LEAVITT JR. D. M. E. CONSULTING ENGR. GEO. B. ROSS AGENT IN N.Y.

SUBMARINE TUNNEL AND TUBE COMPANY

Will supply estimates for laying double or single Railway Tunnels, Water Mains or Tubes across any bay or channel. Correspondence solicited.

Office, 95 Liberty Street, Room 2,
NEW YORK, N. Y.

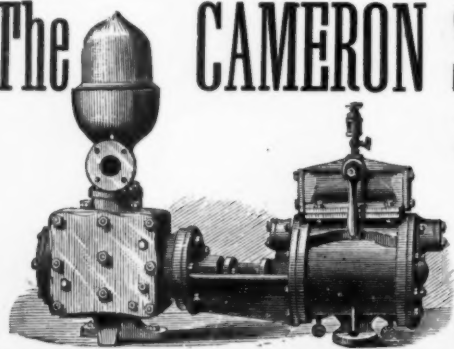


The CAMERON STEAM PUMP

Is the Standard of Excellence

AT HOME AND ABROAD.

THE A. S. CAMERON
Steam Pump Works,
Foot of East 23d St., New York



Advertise in the Manufacturers' Record.

THE BILLINGS & SPENCER CO.

MANUFACTURERS OF

SCREW PLATES & DIES.

TAP & REAMER WRENCHES.

PACKER & DOUBLE ACTING RATCHET DRILLS.

CLAMP DIE & COMMON LATHE DOGS.

ADJUSTABLE WRENCHES. BARWICK PIPE WRENCHES.

MACHINE WRENCHES.

COMBINATION PLYERS.

BEACH'S PATENT THREAD CUTTING TOOLS.

HARTFORD, CONN.

→ HARDWARE. ←

Baltimore WHOLESALE Prices.

ANVILS.
Eagle and Vulcan..... 10 c. dis 20%
Wright's..... 10 c. dis 20%
Armstrong's Mouse Hole..... 10 c. dis 20%
Trenton..... 10 c. dis 20%
Wilkinson's..... 10 c. dis 20%

AUGERS AND BITS.
Conn. Valley Mfg. Co..... dis 60% to 10%
Douglas Mfg. Co..... dis 60% to 10%
Cook's Douglass Mfg. Co..... dis 60% to 10%
Grissold..... dis 60% to 10%
Patent Solid Head..... dis 60% to 10%
Russell Jennings' Auger, Dowell, Machine..... dis 60% to 10%

Dowel and Hand Rail Bits..... dis 60% to 10%
Ives' "Jennings" Bits..... dis 60% to 10%
Expansive Bits, Clark's small, dis 25%
Expansive Bits, Ives'..... dis 60% to 10%
Expansive Bits, Blake's..... dis 60% to 10%
Hollow Augers, Ives'..... dis 60% to 10%
Hollow Augers, Douglass'..... dis 60% to 10%
Hol. Aug., Bonney's Adjust., dis 25%
Hol. Aug., Stearns' Adjust., dis 25%
Hol. Aug., Ives' Expansive, each \$4.50, dis 30%
Hol. Aug., Universal Expansive, each \$4.50, dis 30%
Wood's..... dis 60% to 10%
Gimlet Bits..... dis 60% to 10%
Gimlet Bits, Diamond..... dis 60% to 10%
Double Cut Gimlet Bits, Shephardson's..... dis 60% to 10%
Double Cut Gimlet Bits, Douglass'..... dis 60% to 10%
Double Cut Gimlet Bits, Ives'..... dis 60% to 10%
Morse's Bit Stock Drill..... dis 60% to 10%
L'Hommedieu's Ship Augers..... dis 15%

AWL HAFTS.
Sewing Brass Ferrule..... dis 60% to 10%
Patent Sewing, Short..... dis 60% to 10%
Patent Sewing, Long..... dis 60% to 10%
Patent Peg, Plain Top..... dis 60% to 10%
Patent Peg, Leather Top..... dis 60% to 10%

AWLS, BRAD SETS, &c.
Awls, Sewing, Common..... 75c. to \$1
Awls, Shouldered Peg..... 75c. to \$1
Awls, Patent Peg..... 50c. to \$1
Awls, Shouldered Brad, gross \$2.70, dis 25%
Awls, Handled Brad, gross \$2.70, dis 25%
Brad Sets, Aiken's, No. 43, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 43, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 44, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 45, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 46, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 47, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 48, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 49, gross \$1.20, dis 25%
Brad Sets, Stanley's, No. 50, gross \$1.20, dis 25%

AXES.
Collins & Co..... \$7.25; beveled, \$7.75
Cohoes Mfg. Co..... \$7.25; beveled, \$7.75
Lippincott or Mann's.....
Single Bit, 4 1/2 to 5 1/2 and under..... dis 60% to 10%
Single Bit, 5 1/2 to 6 and over..... dis 60% to 10%
Double Bit, 4 1/2 to 5 1/2 and under..... dis 60% to 10%
Double Bit, 5 1/2 to 6 and over..... dis 60% to 10%
Double Bit, beveled..... dis 60% to 10%
Second quality Axes..... 50 cts. less than above

AXLES.
Sheldon & Co., iron..... 55% off
" " steel..... 55% off
AXLE GRASSES—Fraser..... 10 c. dis 60%

BALANCES.
Spring Balances..... dis 40% to 10%

BELLS.
Hand, Light Brass..... dis 75% to 10%
Hand, White Metal..... dis 60% to 10%
Hand, Silver Chime..... dis 60% to 10%
Hand, Globe (Cone's Patent)..... dis 60% to 10%
Gong, Abbe's..... dis 60% to 10%
Gong, Yankee..... dis 60% to 10%
Gong, Barton's..... dis 60% to 10%
Gong, Reading..... dis 60% to 10%
Gong, Pull, Brook's..... dis 60% to 10%
Gong, Taylor's..... dis 60% to 10%
Lever, Sargent's..... dis 60% to 10%
Bloomfield..... dis 60% to 10%
Lever, R. & E. M. Co's..... dis 60% to 10%
Call..... dis 60% to 10%
Cow, Common Wrought..... dis 60% to 10%
Cow, Western, Sargent's List..... dis 60% to 10%
Cow, Kentucky, Sargent's List..... dis 60% to 10%
Cow, Moore's or Dodge's, Genuine K., new list..... dis 60% to 10%
Nos. 0, 1, 2, 3, 4, 5, 6 Hog (dis 70%
\$12 \$10 \$8 \$7 \$6 \$5 \$4 \$3 \$2 \$1
Cow, Texas "Star"..... dis 40%

BELLOWS.
Blacksmith's Common..... dis 60% to 10%
Molder's..... dis 60% to 10%
Hand Bellows..... dis 60% to 10%

BLIND FASTENERS.
Francis..... dis 60% to 10%
Mackrell's..... dis 60% to 10%
Van Sand's Screw Pattern..... dis 60% to 10%
Van Sand's Old Pattern, 1 1/2, 2, 3, 4, 5, 6, 8, 10, gross, net
Merriman's, new list, net
Zimmerman's, 9 in..... gross \$33.00
Zimmerman's, 9 in..... gross \$30.00

BLIND STAPLES.
Barbed, 1/2 in. and larger..... dis 60% to 10%
Barbed, 1/2 in..... dis 60% to 10%
Barbed, 1/2 in..... dis 60% to 10%

BLOCKS.
Bagnall & Loud..... dis 30%

BOLTS.
Cast Iron Barrel Shutter, &c..... dis 55% to 10%
Cast Iron Chain (Sargent's list)..... dis 60% to 10%
Wrought Barrel..... dis 55% to 10%
Wrought Square..... dis 55% to 10%
Wrt. Shutter, Brass Knob, Stanley's list..... dis 50% to 10%
Wrought Shutter, Sargent's list..... dis 50% to 10%
Wrought Sunk Flush, Sargent's..... dis 60% to 10%
Wrought Sunk Flush, Stanley's..... dis 60% to 10%
Wrought B. K. Flush, Stanley's..... dis 60% to 10%
Carriage and Tire, Common, new list..... dis 80%
Carriage and Tire, Philadelphia Pattern..... dis 80%
Carriage Bolts, Clarke's..... dis 75% to 10%
Norway..... dis 75% to 10%
R. B. W. Carriage (old list)..... dis 65%
Tire, American Screw Co's, Phila..... dis 85%
Tire, "Bay State"..... dis 70% new list
Eagle Philadelphia Tire Bolt..... dis 85%
stove..... dis 70%
Flow..... dis 60% to 10%
Machine..... dis 75% to 10%
Bolt Ends and Lag Screws..... dis 75% to 10%

BOWLS.
150 lb net.
Q. S. Backus..... dis 50%
Barber's..... dis 50%
Spofford's Patent..... dis 50%
Ive's Patent Braces..... dis 50%
Common Ball (American)..... dis 55%
Amidon's..... dis 50%

BORING MACHINES—WITHOUT AUGERS.
Sweet & Clark upright, 3.60 angular..... 4.40 net
Lawrence..... 3.00 " " 3.50 net
Hubbard..... 3.00 " " 3.50 net
Phillips, with Augers..... 7.00 " " 7.50 net

BRACKETS.
Shelf, plain..... dis 50% to 10%
Shelf, fancy..... dis 55% to 10%

BRIGHT WIRE GOODS.

New list..... dis 70% to 10%
BULL RINGS.
Union Nut Co..... dis 55%
Sargent's..... dis 60% to 10%
Humason, Beckley & Co's..... dis 60% to 10%

BUTTS.
Wrought Brass..... dis 70%
Cast Brass, Fast Joint..... dis 60% to 10%
Cast Brass, Loose Joint..... dis 60% to 10%
Fast Joint, Narrow..... dis 60% to 10%
Fast Joint, Broad..... dis 60% to 10%
Loose Joint..... dis 60% to 10%
Loose Joint, Japanned..... dis 60% to 10%
Loose Joint, Jap, with Acorns..... dis 60% to 10%
Parliament Butts..... dis 60% to 10%
Mayer's Hinges..... dis 60% to 10%
Loose Pin, no Acorn..... dis 60% to 10%
Loose Pin, Acorn..... dis 60% to 10%
Loose Pin, Acorns, Japanned..... dis 60% to 10%
Loose Pin, Acorns, Jap'd, Plated..... dis 60% to 10%

Wrought Iron.
Fast Joint, Narrow..... dis 60% to 10%
Fast Joint, Lt. Narrow..... dis 60% to 10%
Fast Joint, Broad..... dis 60% to 10%
Loose Joint, Broad..... dis 60% to 10%
Table Butts, Back Flaps, &c..... dis 60% to 10%
Inside Blind, Regular..... dis 60% to 10%
Loose Pin, Wrt..... dis 60% to 10%
Loose Pin, Light..... dis 60% to 10%

Spring Hinges.
Geer's Spring and Blank Butts..... dis 30%
Hart Manufacturing Co..... dis 60% to 10%
American Spring Hinge Co's..... dis 25%
Gem Spring Hinges..... dis 25%
Blind Butts, Shephard's, Nos. 50 and 60..... dis 70%
Blind Butts, Shephard's, No. 50..... dis 70%
Blind Butts, Shephard's, No. 75..... dis 70%
Blind Butts, Lull & Porter..... dis 80%
Blind Butts, Huffer..... dis 80%
Blind Butts, Clark's, Nos. 1, 3, 5..... dis 80%
Standard Lull & Porter..... dis 75% to 10%

Humason, Beckley & Co's.
Sargent & Co's..... \$19.70 and \$1.40; dis 25%
Hotchkiss..... dis 25%

BUTCHER'S CLAWERS.
Humason & Beckley Mfg. Co..... dis 25%
Bradley's..... dis 25%
Beatty's..... dis 25%

CAN OPENERS.
American..... gross \$7.50, dis 10%
New Idea..... gross \$15.00, dis 10%
No. 4, French..... gross \$2.25, dis 55%
No. 5, Iron Handle..... gross \$7.50, dis 55%
Sardine Scissors..... gross \$7.50, dis 55%
Sprague, No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Humason, Beckley & Co's.
Sargent & Co's..... \$19.70 and \$1.40; dis 25%
Hotchkiss..... dis 25%

BUTCHER'S CLAWERS.
Humason & Beckley Mfg. Co..... dis 25%
Bradley's..... dis 25%
Beatty's..... dis 25%

CAN OPENERS.
American..... gross \$7.50, dis 10%
New Idea..... gross \$15.00, dis 10%
No. 4, French..... gross \$2.25, dis 55%
No. 5, Iron Handle..... gross \$7.50, dis 55%
Sardine Scissors..... gross \$7.50, dis 55%
Sprague, No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499,

Hartford Silver Metal

We are now able to offer our customers a

Substitute for Solid Silver and Silver-Plated Ware

that is perfectly reliable and will wear a life-time. The points of merit of this new article are: the Metal is very nearly AS WHITE AS SILVER; it is the SAME METAL ALL THROUGH; there is NO COLORING OR PLATING ABOUT IT; it costs about ONE-THIRD as much as Silver-Plated Ware; with the same care it will give as good satisfaction as Solid Silver or Plated Ware.

Don't Fail to Send for a Sample Lot of This Ware and Try It!

Our line of SILVER-PLATED HOLLOW and FLAT WARE is as extensive as ever. We are continually adding new designs, and should be pleased to submit them to our customers.

REMEMBER!

We Guarantee all Goods bearing our Trade Mark.

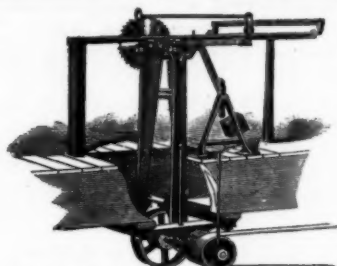
The WM. ROGERS MFG. CO.

Drawer 30, HARTFORD, CONN.



Trade: Send for cuts:
Gratis.
Send for circulars: Gratis.
Send for Book of
Rules.

THE LIGOWSKY
Clay Pigeon Co.
Box 1,292,
Cincinnati, Ohio.



New Swing Cross Cut Saw,

with rigid iron frame and steel arbor. The frame is mounted on a heavy iron base, bolted to the joist under the floor. Saw Mill Mandrels, Saw Machinery, and all sizes of Saw Arbors.

R. M. McBETH & CO.
185 Pearl Street, Cincinnati, Ohio.



THE BRADSTREET Mercantile Agency

HAS NOW BEEN

Under its present successful management for
the past seven years,

And during that time its business has more than
trebled, while its facilities have propor-
tionately increased.

No expense is considered too great in obtain-
ing and applying to the conduct of the business
all possible improvements. With its present
system for obtaining and promulgating infor-
mation, this Agency is justly regarded by its
patrons as authority on all matters affecting
commercial credit. Its ramifications are greater
and its business larger than any similar organi-
zation in the world conducted in one interest
and under one management.

You are respectfully invited to investigate,
and if in need of an Agency, to test its ability
to serve you.

CHAS. F. CLARK, President.

Baltimore Office,—American Building,
H. KERSHAW, Supt.

WHITTIER-RAMSEUR-SILU LAND IMPROVEMENT COMPANY.

Lands in Western North Carolina and East Ten-
nessee bought and sold. Surveys made and accurate
descriptions given. Neat and complete maps made.
Titles looked up and full abstracts furnished, and
lands protected from depredations and second entry.
The Land Agency of Whittier, Ramseur & Silu
attends to all things connected with a general land
agency. Does business in the counties west of the
Balsam mountain in North Carolina and the ad-
joining counties in East Tennessee. Clarke Whittier,
Banker and Manager, references, Chase National
Bank, of Broadway, N. Y., Bank of Asheville, of
Asheville, N. C., and Riverside Banking Co., of
Riverside, Cal., is prepared to make cash advances
on lands that are for sale. H. M. Ramseur, C. E.
and Surveyor, will make surveys, maps, &c., of all
lands put into our hands.

R. W. Silu, attorney, makes investigation of titles
a specialty, and makes abstracts of same. As we go
over and thoroughly examine all lands that we
handle, we know what we say when we tell anyone
what kind of land we offer. Land purchasers and
sellers give us a trial, and we will give you satisfac-
tion. Correspondence solicited.

HOMES WITHOUT CAPITAL.

C. Whittier is dividing 60,000 acres of healthy,
rich, sunny, mountain, tobacco, wheat, grass, and
timber land into 1,000 small farms for actual settlement
only. Sold on more favorable terms than leasing—
6 per cent. int. for five years, then 5 more to pay for
land. Never such an opportunity to help yourselves
and your country, for here we go for temperance and
morality.

CLARKE WHITTIER, Banker & Manager,
H. M. RAMSEUR, C. E. and Surveyor,
R. W. SILU, Attorney.
Whittier, Charleston P. O., Swain County, N. C.

MACHINE LOADED Cartridges For Shot Guns.

Vastly Superior to Cartridges Loaded
by Hand, and CHEAPER.

Loaded by Chamberlin Automatic Machine.

The highest explosive force of powder is de-
pendent very much on the amount of compres-
sion. This fact is understood by the Chamberlin
Company, who graduate their rammers to the
most advantageous pressure, which is applied
uniformly to all cartridges. In hand-loading the
amount of pressure in ramming can not be
gauged and no two cartridges are, perhaps, ram-
med just alike; consequently producing
different results. A uniformly superior result
over hand-loaded shells will be apparent to
those who use this ammunition.

Although the machine was only invented
in 1884, yet the cartridges loaded by it are now
sold all over the country, and the demand is
rapidly increasing.

Only the very best material used and the
cartridges guaranteed.

They have made some wonderful scores.
Send for our handsomely illustrated catalogue.

Tatham & Bros.

82 Beekman Street,

NEW YORK, N. Y.

SAM. F. HARLAN,

LOUISVILLE STEAM PUMP WORKS.

Harlan's Improved Tube Well Pumps

Combined with the famous Cook Strainer,
for Manufacturers and Private Use.

All kinds of Pumps Repaired, also, Black-
smithing and General Jobbing Shop, Awnings,
&c. Cistern and Well Pump Manufactory.

921 W. Jefferson St., LOUISVILLE, Ky.

SCIENTIFIC AMERICAN

ESTABLISHED 1845

The most popular Weekly newspaper devoted
to science, mechanics, engineering discoveries,
inventions and patents ever published. Every num-
ber illustrated with splendid engravings. This
publication furnishes a most valuable encyclopedia
of information which no person should be without.
The popularity of the SCIENTIFIC AMERICAN is
such that its circulation nearly equals that of all
other papers of its class combined. Price, \$3.25 a
year. Discount to Clubs. Sold by all newsdealers.
MUNN & CO., Publishers, No. 361 Broadway, N. Y.

PATENTS. Munn & Co. have
also had Thirty-
eight years' expe-
rience before
the Patent Office and have prepared
more than One Hundred Thou-
sand applications for patents in the
United States and foreign countries.
Caveats, Trade-Marks, Copy-rights,
Assignments, and all other papers for
securing to inventors their rights in the
United States, Canada, England, France,
Germany and other foreign countries, pre-
pared at short notice and on reasonable terms.
Information as to obtaining patents cheer-
fully given without charge. Hand-books of
information sent free. Patents obtained
through Munn & Co. are noticed in the Scientific
American free. The advantage of such notice
is well understood by all persons who wish to dis-
pose of their patents.
Address MUNN & CO., Office SCIENTIFIC
AMERICAN, 361 Broadway, New York.

ESTABLISHED 1865.

Steam Boilers

JOHN T. COLEMAN & SONS,

Steam Boiler Works,

Cor. Holliday and Pleasant Sts., Baltimore.

Manufacturers of all kinds of Steam and Bath Boilers
Smoke Stacks, Water Tanks, Lard Kettles, &c.
Particular attention given to repairs.

1837. NOVELTY WORKS. 1883.

JAMES MURRAY & SON, Machinists and Millwrights

Engines and Boilers, Mills of all kinds, Marine
Railways, &c. Improved Clay Tempering Ma-
chinery, Steam or Horse Power. Phosphate
Machinery, Crushers, Rollers, Mixers, &c., &c.

40, 42 & 44 York Street,
NEAR LIGHT, BALTIMORE.

Repairing of all kinds promptly done.

SPORTSMEN'S CLOTHING!

ALSO CLOTHING FOR

Civil Engineers, Surveyors, Ranchmen,
Miners, Lumbermen, Etc.,

Manuf. from Best CORDUROY, MACKINTOSH,
CANVAS, MACKINAW, LEATHER, Etc.

WRITE FOR CATALOGUE.

UPTHEGROVE & McLELLAN, Valparaiso, Indiana.



THIS is our Skeleton
Coat, of strong
material, and
weighs but 15
oz. Will mail
it to you for \$2.
Send us breast
measure.



THE NEW YORK MOIST LETTER COPYING BOOK.

[Patented Nov. 26, 1878.]



Uniform Copies. Saves Time.

NO WATER, NO BRUSH. ALWAYS READY.

E. L. FARGO,

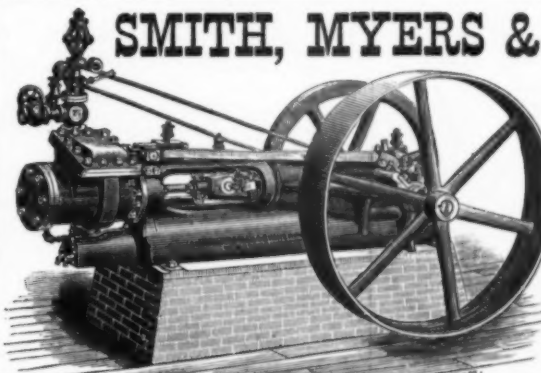
Sole Manufacturer,

106 Liberty Street, New York.

In the use of "This Book," the great
annoyance of water, brushes, cloths,
etc., is done away with; the book is
ready at all times to copy any number
of letters at once. Parties using same,
pronounce it the very thing they want; the copies are clear, distinct and uniform.

PRICES REDUCED.

Send for Price-List.



SMITH, MYERS & SCHNIER,

402 to 412 W. Front Street,
CINCINNATI, O.

MANUFACTURERS OF

PATENT TERRAPIN
CENTRE CRANK
ENGINES,

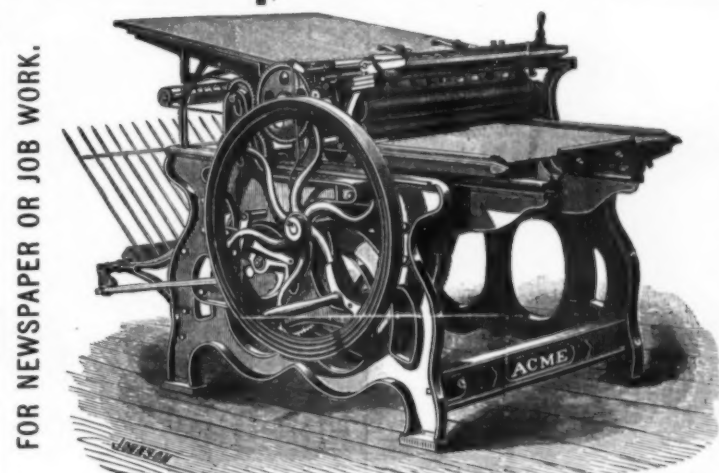
from 15 to 200 Horse Power.

BOILERS AND

SAW MILL MACHINERY.

Send for illustrated Catalogue
and prices.

The ACME Improved Two-Revolution Press.



FOR NEWSPAPER OR JOB WORK.

FOR STEAM OR HAND POWER.

These Presses combine, in a thoroughly perfected machine, many features whose value
will be readily appreciated, including several which have never been practically developed
by any Cylinder Press. Among these features are: Compact and firm in all its adjustments;
the most perfect two-roller ink distribution; speed combined with perfect registration;
slow movement of the bed during the impression, and quick return; suspending the
impression; suspends the grippers, guides and ink; ink can be distributed without inking
form; unlimited rolling of the form; composition rollers interchangeable; feeder can
suspend action of the ink fountain; impression adjustable while the Press is in opera-
tion; whole form accessible for correction on the Press; quiet operation without jar;
great saving in wear of type; convenient height of bed.

The present hand-power Acme Presses fully equal, in capacity for fine work, the first-
class two-roller Presses of other kinds, and they run much easier, and are also capable of
higher speed by steam than any other Cylinder Press manufactured for country offices or
for hand operation. The convenience of changing from newspaper to poster and job work
is unequalled.

PRICES, - - \$900 to \$2,500.

Circulars, with sizes and prices, will be sent on application.

C. C. CHILD, MANUFACTURER,
64 Federal Street, Boston, Mass.

Business Chances.

For the purpose of making the MANUFACTURERS' RECORD a still more valuable medium of communication between its readers North and South, we will publish, FREE OF CHARGE, short advertisements, not exceeding 40 words, from those in the South who have good business openings that they wish to bring to public notice, capital wanted for industrial enterprises, &c., &c.; while readers in other sections who desire to engage in manufactures at the South are also invited to use these columns, without cost, either in seeking information regarding the advantages and special claims of different localities, or for asking about good openings for men and money. This department is also free for Southern manufacturers who wish to advertise for mill managers, superintendents, engineers, &c.

In corresponding with any of these advertisers please mention the Baltimore Manufacturers' Record. Parties advertising in this column must have replies sent to their own address, and not to care of Manufacturers' Record, unless stamps are sent for forwarding replies. Advertisements sent not in accordance with this requirement will not be inserted.

A CABINET MAKER can hear of a good opening in this county. A splendid water power given away sufficient to run machinery. Also wagon-making and repairing. This is a good opportunity for a man of enterprise and small or large capital. Write to S. Worthen, Bakersville, Mitchell county, N. C.

WANTED—To learn of a good opening for the establishment of a large saw mill in Eastern Tennessee or Western North Carolina, where there will be abundance of timber for several years' work, and near transportation. H. F. Burt, Elizabethton, Tenn.

A GOOD OPENING for a journalist. A half interest in a live, successful paper in the South is for sale. The owner is a lawyer, and desires to give his whole time to his profession. His partner, who is a practical printer, will remain in the business. The paper will pay handsomely. Address Editor, care MANUFACTURERS' RECORD.

MACHINIST WANTED—A machinist with small capital, who desires to locate in the South, can learn of a good chance by addressing P. O. Box 23, Maryville, Tenn.

RAREST CHANCE in a life time for hotel man with energy and capital to get rich. A North Carolina city, noted for its thrift and growth, and bad hotel facilities, is in positive need of a first-class hotel, run by an experienced hotelier, who can furnish half enough capital to erect the building; the balance will be readily subscribed by prominent citizens. Address X. Z., care of MANUFACTURERS' RECORD.

FURNITURE OPENING—A fine opening for a furniture business in a live North Carolina town, of nearly 10,000 population, and where there would be only one competitor. Splendid prospect for the manufacture of chairs and other furniture. Address, stating amount of capital you can invest, No. 39, care MANUFACTURERS' RECORD.

ENGRAVER WANTED—A young, unmarried, designer and engraver, of moderate talent, wanted. State amount of salary desired, &c. Address immediately, Oldham Publishing House, Winston, N. C.

TWO New England mill men, thoroughly understanding bleaching, dyeing and finishing cotton goods, desire correspondence with manufacturers as to localities in the South possessing advantages for starting this business, what inducements offered, &c. Address D. and B., care MANUFACTURERS' RECORD.

WANTED—A sober, energetic and competent man, with some capital, to take an interest in, and assume the treasuryship of a coal mining and shipping company in Alabama. His duties will be to attend to the sales of coal and coke, with office at Atlanta, Ga. A fine opening for the right man, with whom good terms will be made. Address Coal Co., care MANUFACTURERS' RECORD.

WANTED—At the Emily Mines, Spottsylvania county, Va., a first-class machinist, one who understands handling pumps and pumping machinery, keeping machinery in repair, &c. To a first-class man, first-class wages will be paid. No one who drinks liquor of any kind need apply. Address Thomas J. McSpieden, Superintendent, Mine Run, Orange county, Va.

A MANUFACTURER, or wholesale house can employ on reasonable terms, a successful Attorney and Collector, of six years' practice, to attend to collections and legal business in the South. Best reference given. Address Attorney, care MANUFACTURERS' RECORD.

WANTED—An active young man of experience in the manufacture of smoking tobacco. Must have \$4,000 to \$5,000, to join a gentleman of equal capital, to establish a manufactory South. Address Jones, care of Walton & Ewin, Nashville, Tenn.

BEING interested in quarrying fine Tennessee marble, I would like to correspond with some one having experience in sawing marble and with capital to invest, with a view to erecting a mill in connection with quarry. Address P. O. Box 72, Rogersville, Tenn.

PARTNER WANTED with \$5,000 to start a stove factory by parties representing over \$30,000 in real estate and having ample experience. A large profit can be made. Will guarantee the investment and 8% per annum. Address Enterprise, Lock Box 27, Warrenton, Va.

I WISH to meet with a capitalist with a view to manufacture special machinery, which will be secured by patents, for the manufacture of silk, cotton and leather goods, or to build machinery and manufacture the goods. Special information to correspondents. Address P., care MANUFACTURERS' RECORD.

WANTED—By an energetic, live young man a partner with \$10,000 to \$20,000 to engage in the tobacco business in Piedmont, North Carolina. Best of reference given, showing him qualified to handle business. Address Tobacco, care MANUFACTURERS' RECORD.

WANTED by a qualified mining engineer a position as superintendent or manager of a mine in the South. Accurate mine surveys made and ventilation attended to. Address Geo. D. Stonestreet, Mining Engineer, Box 397, Birmingham, Ala.

WANTED—A position in a sash and blind factory as foreman or master-workman; 12 years' experience; well up in all kinds of wood-working; can give best recommendations. W. T. L., care MANUFACTURERS' RECORD.

A YOUNG MAN, engaged in designing and superintending the construction of machinery, wishes to hear of an opportunity in the South to invest \$2,000 to \$3,000 and services. David Eldredge, care of Ed. Wolf, 572 Eighth Avenue, New York City.

FOR SALE—I offer for sale an interest in a well-established Foundry and Machine Business. A good location; a growing business; valuable patents and patterns. Control of the Southern States on a valuable specialty. For particulars address W. J. care MANUFACTURERS' RECORD.

WANTED—A partner with \$5,000 or \$6,000 to engage in a very profitable manufacturing business. Special inducements will be given to right party. Large demand and good profit. For particulars address H. L. Freeman, Concord, N. C.

I WANT a foreman for a furniture factory. J. H. Taylor, Greenville, S. C.

TWO WATER POWERS on same stream and in sight of each other for sale. Fall about 18 feet, and about 30 horse power each. One is now running a one set woolen mill, building new, 3 stories, and large enough for two set mill. Well located. At the other place is a mill house. Good location for business of any kind. In connection with these water powers there are 200 acres of good land, with two dwelling houses, barns, and all other out-buildings. Will sell all together or separately. For full description write to Henry Miller & Son, Jonesboro, Tenn.

CORPORATIONS, or individuals, wishing the services of a thorough business man and accountant to act as manager, purchasing agent, or other responsible position, may address the undersigned. Experienced in the management of large numbers of men. Competent to fill almost any position. Best city references. G. C., 130 Belleville ave., Newark, N. J.

A FIRST-CLASS MOULDER with moderate capital, also a pattern-maker, can secure an interest in a paying business in the South. Business now in fine condition, but without sufficient facilities to do all the work that can be secured. Additional capital needed. Address H. & Co., care MANUFACTURERS' RECORD.

Get the Best at First.

The Holyoke Machine Company, of Worcester, Massachusetts, advertise in this issue their well-known Hercules Water Wheel. This wheel has many points of merit that strongly commend it to the attention of those who use water power. The most thorough tests have demonstrated its many good qualities. In Holyoke it is the standard water wheel, the aggregate horse power of the Hercules wheels in operation there being greater than that of all other wheels combined. These wheels are very popular in the South as well as in the North, having been in use for many years in a large number of Southern mills. There are four of the Hercules wheels now in operation in the big cotton mills of the Eagle & Phenix Manufacturing Co., Columbus, Ga., and Mr. John Hill, of that company, in writing, Feb. 25, 1885, to the Holyoke Machine Co., said: "Within the past four years I have ordered four 'Hercules' wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a 'Hercules' wheel has been added each time a new wheel was wanted. In the Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The 'Hercules' is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon."

That is a pretty strong letter, but it is only a sample of letters received by the manufacturers of this wheel. Among the recent shipment of wheels have been two—one a 34-inch and one of 60-inch—to a Georgia cotton mill. Two Hercules wheels are being put in at Natick Cotton Mill, and one at the Arctic Mill of B. B. & R. Knight near Providence. This will make eleven wheels furnished to this well-known firm, one of the most prominent in the manufacturing line in New England. Hercules wheels are sold in England, Ireland and Scotland, and on the Continent, a cable order having been received only a few days ago for one to go to France. The manufacturers say: "The Hercules gives the most power for its size and the highest average percentage from full to one-half gate of any wheel ever made." Their advice to all users of water wheels is to "get the best at first." If you are interested in water wheels, if you want a new wheel or a larger wheel, or a better wheel than you are using, write to the Holyoke Machine Co., Worcester, Mass., for catalogue No. 3.

DAVID RICE, Atlanta, Ga. Machine * Tools

AND
Railroad Shop Equipments, Mining Tools, &c.
Southern Agent Rand Drill Co., Diamond Emery Wheel and Machine Co., L. B. Flanders Machine Co., Hazard Mfg. Co.

ATLANTA SAW WORKS.

Manufacturers of every variety of **SAWS!!**

And dealers in **SAW MILL SUPPLIES**

Workmanship guaranteed to give perfect satisfaction.

Atlanta, Ga.



Cotton Mills For Sale.

The two mills of the Petersburg Cotton Mills, with all their machinery, tenement houses, &c., will be sold at public auction on Dec. 15th and 16th next, at Petersburg, Va. For catalogue and particulars apply to

ALEXANDER HAMILTON.

Trustee and Commissioner,
Petersburg, Va.

BUCKEYE BOILER & BRIDGE WORKS, CLEVELAND, OHIO.

Manufacturers of all Kinds of

WROUGHT IRON BRIDGES.

also, BOILERS, TANKS, STILLs,

BLAST FURNACES,

and all kinds of Plate Work.

Jail Cells, Bank Vaults,

and HEAVY GIRDERS for Buildings.

Estimates Furnished upon Application.

FOR SALE.

Cheap.

Second Hand.

Good Condition.

PLANNER.

18 in. x 20 in. x 3 1/2 feet.....\$125

HORIZONTAL BORING MILL.

40 in. swing, 56 in. between centers...\$420

EDWIN HARRINGTON, SON & CO.

North 15th Street and Pennsylvania Avenue.

PHILADELPHIA, PA.

THE BAY LINE

FORTRESS MONROE, NORFOLK and the SOUTH.

The Bay Line comprises the New and Elegant Steamers

"VIRGINIA," "CAROLINA" and "FLORIDA."

All the Comforts and Luxuries of a First-Class Hotel are afforded the Traveler. Spacious and Elegant Saloons and Staterooms, furnished with an especial view to comfort. Unsurpassed Cuisine, which is made a specialty with this Line. Elegant service and courteous attention. Steamers leave Baltimore daily except Sundays at 9 P. M.

At Old Point Comfort is located the SPLENDID HYGEIA HOTEL, a Delightful Resort at all Seasons of the Year. For Tickets and Information, apply at Company's office.

157 W. BALTIMORE ST., BALTIMORE,

Or on Board of Steamers.

D. J. HILL, Superintendent.

E. BROWN, General Ticket Agent.

SOUTHERN INVESTMENT. CLARENCE GORDON,

Member of the New York Real Estate Exchange and Auction Room, Limited,
4 & 6 Pine Street, New York.

SELLS OR CAPITALIZES large, valuable Southern Properties. On receipt of full description and purpose, a circular of business system will be mailed to applicant. Interests of Sellers and Investors held in equal regard.

CAPITALISTS AND ACTUAL OPERATORS seeking Southern Investment in Timber, Grazing, Mineral, or Agricultural land, or in Manufacturing property, may consult a line of Reports, made from examination by Experts of this office, answering exhaustively and with exactness the most critical inquiry.

Call or Correspondence Invited.

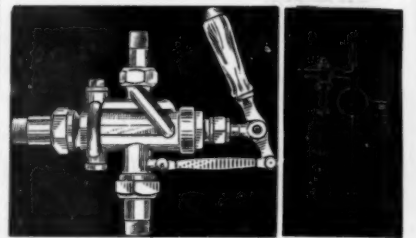
HEADING, BARREL, KEG AND STAVE MACHINERY

NEW AND SECOND-HAND.

JOHN S. ORAM,

165 RIVER STREET, - - - CLEVELAND, O.

Send for Catalogues for 1885 and Price-Lists.



Buckeye * Injectors,

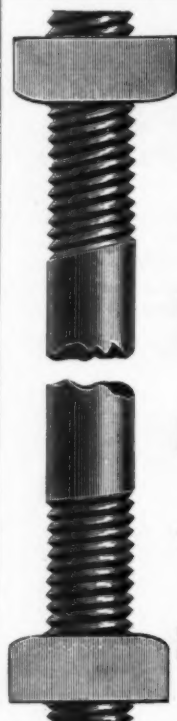
—Lubricators, Wrenches, Etc.—

For circulars address **CROSBY, BURTON & CO.**

204 Lake St., Chicago, Ills.

**WESTERN
* FORGE *
AND
TOOL WORKS**

MANUFACTURERS OF
Bridge & Roofing Bolts
BOLT ENDS,
Wrought and Cast
WASHERS,
1220 1/2 1222 Collins St.
ST. LOUIS, MO.



FOR SALE.

A Portable 20 Horse-Power Engine and Saw Mill, with large lot of timber, if desired, within 6 miles of Farmville, and 3 from railroad. Also one 8 Horse-Power Portable Engine, on skids, Horizontal Boiler, Talbot's make. It is now mounted on truck and used for threshing wheat. Address

FARMVILLE MANUFACTURING CO.,
Farmville, Virginia.

**TAPS & DIES
VISES
STILLS
DRILLS
MACHINES
SCREWS
LATHES
FILES
STEEL
STOCKS**

TOOLS for Machinists, Amateurs, Jewellers, Model Makers, Blacksmiths, Carpenters, Coachmakers, etc.
Send 20 cts. for new Metal Worker's Catalogue, 300 Pages.
Wood Worker's Catalogue free.
FALLMAN & McFADDEN, Philadelphia, Pa.

* IRON *

ROOFING

SIDING, CEILING,
ARCHES AND LATH.

CINCINNATI
CORRUGATING CO.
CINCINNATI, O.

SEND FOR ILLUSTRATED CATALOGUE.

FRED. J. MEYERS MFG. CO.
COVINGTON, KY., Manufacturers of
WIRE GOODS OF ALL KINDS,
Wrought-iron Fencing, Cresting and Hardware Specialties.
Send for Illustrated Catalogue and Price List.

and and Grain Riddle. Wire Counter Railing. Mocking Bird Cage.

Keep Your Steam Boilers Clean!

"An Ounce of Prevention Worth a Pound of Cure."

SAVE YOUR FUEL!

Warner's Purifier and Heater

[PATENTED JULY 21, 1885.]

The best way to *care* your steam boilers of incrustation and sedimentary deposit is to *keep out* of the boiler that which causes incrustation and sediment.

The chief ingredients causing sedimentary deposits and incrustation are organic matter, carbonate of lime, sulphate of lime, carbonate of magnesia, sulphate or sulphure of iron, and in salt water common salt.

The WARNER PURIFIER AND HEATER is the only machine which precipitates all impurities held in suspension, heats the water to the boiling point under full boiler pressure, separates and precipitates the mineral salts held in solution *before* the water reaches the boiler, and then injects the water thus purified into the boiler *boiling* hot. It is an automatic machine, entirely outside of the boiler, requiring absolutely no attention from the engineer except to blow off the accumulation of deposit from the bottom of the machine which acts as a mud-drum. All this is accomplished without the use of chemicals, by a purely mechanical process, regulated by the principles of natural philosophy.

No more "shutting down" of work to clean boilers—the machine does it all every day without interfering with the work, and by removing scale and preventing its formation, and heating the water to the boiling point *saves a large percentage of fuel.*

The WARNER HEATER AND PURIFIER COMPANY is now ready to furnish these machines on demand at very reasonable figures.

WASHINGTON, D. C., May 23, 1885.

This is to certify that I have made a careful examination of "Warner's Combined Purifier and Heater of Feed Water" in practical operation at the "Harris House" and "Post Building," in this city, and do not hesitate to pronounce it the best machine for the purpose ever invented. By its use the water goes into the boiler free from all impurities and heated to the boiling point under full boiler pressure, and as the result of the injection of pure water, the boiler is freed from scale and *kept clean*, while a large saving is made in fuel by the removal of the scale and heating the water to the boiling point *before* it enters the boiler. By the use of this machine the necessity of "shutting down" in order to blow out and clean the boiler is wholly obviated, as the impurities are all collected in the bottom of the machine, which can be blown out as many times a day as the engineer thinks proper without interfering with the workings of the boiler. I confidently commend this machine to all persons who own or use steam boilers, and am satisfied that its use will prolong the life of the boiler and make a handsome saving in the use of fuel. Very respectfully,

(Signed) JOHN H. WILKERSON,

Inspector of Steam Boilers for District of Columbia, 230 7th Street, S. E.
"HARRIS HOUSE," COR. PENNSYLVANIA AVENUE AND E STREET, N. W.

WASHINGTON, D. C., June 23, 1885.

This is to certify that one of "Warner's Purifiers and Heaters of Feed Water" has been in use on one of the boilers of the Harris House, in this city, for three months, and has proved a perfect success. The boiler upon which the machine was placed was at the time covered with a heavy scale composed of animal and vegetable matter, lime, &c., which, by the use of this machine, has been entirely removed, the boiler being now as clean as when it came from the boiler-maker. This has been entirely accomplished, without the use of chemicals, by the injection of pure water through the "Purifier and Heater." This machine injects the water into the boiler heated to the boiling point under full boiler pressure, and by this means, together with the removal of the scale, results in a large saving of fuel. It is also invaluable in the purification of the water for laundry purposes. The machine is self-acting, and prevents the necessity of "shutting down" in order to blow out the boiler, as the impurities are all concentrated in the bottom of the machine, and can be blown out through the machine as often during the day as the engineer may deem advisable without interfering with the working of the boiler. I am convinced that its use will prolong the life of all boilers upon which it may be placed, save a large percentage of fuel, decrease the danger of explosion, purify the water for all purposes, and give general satisfaction. I confidently commend it to all hotels using steam and to owners of steam boilers generally as a much needed improvement that will do the work claimed for it thoroughly.

(Signed) JOHN H. HARRIS, Proprietor of Harris House, Washington, D. C.

WASHINGTON "POST" BUILDING, WASHINGTON, D. C., June 23, 1885.

This is to certify that one of "Warner's Purifiers and Heaters of Feed Water" was placed upon the boiler of the Post Building about 60 days ago as a test. At that time the boiler was covered with a heavy scale of animal and vegetable matter, lime, &c., which it was impossible to prevent. By the use of this Purifier and Heater, which injects the water into the boiler free from all impurities and heated to the boiling point, the scale has been removed and the consumption of coal reduced. The machine works itself and is invaluable as a purifier of water to all branches of business requiring pure water, such as hotels, laundries, &c., and a much needed adjunct to all steam boilers, prolonging their life, decreasing the danger of explosion and effecting a large reduction in the consumption of fuel. I confidently commend Warner's Purifier and Heater to all owners of steam boilers, being confident that their interests will be subserved by its use.

(Signed) J. FRANK MCGUIRE, Superintendent and Engineer Post Building.

ADDRESS,

Hon. JOHN F. DEZENDORF,
Room No. 35 Corcoran Building,
—WASHINGTON, D. C.—

BEST ROOF

In the World is the Montross Patent

METAL SHINGLES

Cheap, Durable, Handsome, Fireproof.
Absolutely Water-tight.
Proof against Storms, Snow and Ice.
Can be put on by anybody.
Adapted for all classes of Buildings.
Send for Circulars and Price Lists, free.

E. VAN NOORDEN & CO., BOSTON, MASS.

THE BEST PAINT for the LEAST MONEY.

Asphalt Iron Paint.

"In the highest degree satisfactory."—Burlington (Iowa) Roofing Co.
"Experience of 30 years; think your Asphalt-Iron Paint the only kind of roofing or tank paint worth one cent per square."—W. P. Proudft, Superintendent De Soto Oil Mill, Memphis, Tenn.
"Very much pleased with your car and roofing paint."—M. D. Monserrate, President Gulf, Western Texas and Pacific R. R., Cuero, Texas.

We warrant it superior to any Metallic Paint for all exposed surfaces, wood, brick or metal; colors: red, brown and black. For circulars address

Louisville Asphalt Varnish Co. Louisville Ky.

The STANDARD Steam Pumps.

From KNOWLES' PATENTS with KNOWLES' VALVE MOTION, are the STRONGEST and MOST DURABLE Pump for every duty. MINERS, BREWERS, MANUFACTURERS IN THE SOUTH write for Prices and Descriptive Catalogue to

WHEELER & TAPPAN,
[Sole Manufacturers,]
Office, 88 WEST LAKE STREET,
CHICAGO, ILL., U. S. A.
Works, 49, 51, & 53 N. Jefferson street.

Emery Wheel Tool Grinder.

Pat. Sept. 23th, 1883.

Four sizes of each of these designs.

Grinds much FASTER than grindstones and will soon save their cost. WHEELS ARE MADE TO RUN IN WATER. Will ship on their merits for 30 days' trial, and if not satisfactory can be held subject to our order.

SPRINGFIELD GLUE & EMERY WHEEL COMPANY, SPRINGFIELD, MASS

WOOD-WORKING MACHINERY

FOR

Railroad Shops,
Planing Mills,
Car Builders,
Cabinet, Carriage,
Sash, Door
Blind Makers.

We received eight First-Class GOLD MEDALS at the World's Exposition, at New Orleans, La., on our Machinery, awarded by an Experienced and Practical Committee.

GOLD MEDAL for best Fast-Feed Flooring Machine.

GOLD MEDAL for best Molding Machine.

GOLD MEDAL for best Endless Bed Double Surfacers.

GOLD MEDAL for best Jointing Machine.

GOLD MEDAL for best Circular Saw Machine.

GOLD MEDAL for best Planing Machine for Matching two boards

GOLD MEDAL for best Panel Planer.

GOLD MEDAL for best Shop Surfacers.

[at a time.
Illustrated Catalogues
on Application.

* S. A. WOODS MACHINE COMPANY, *

WAREHOUSES:

91 LIBERTY STREET, 172 HIGH STREET, 61 S. CANAL STREET
New York. Boston. Chicago.

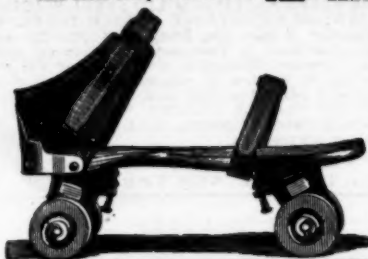
HENLEY'S CHALLENGE ROLLER SKATE.THE LATEST AND BEST
And Most Complete Scientific**SKATES** IN THE MARKET**HENLEY'S IMPROVED CHALLENGE
RINK AND CLUB SKATES**
LIBERAL TERMS TO THE TRADE.

For prices, circulars and further particulars, address

M. C. HENLEY, Patentee and Manufacturer,**RICHMOND, IND.**

Send four-cent stamp for new forty-page Illustrated Catalogue.

Mention Manufacturers' Record.

**ATLANTA RUBBER COMPANY,**

ATLANTA, GA.

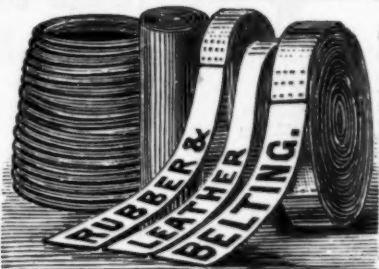
**RUBBER BELTING,
PACKING, HOSE, &c.****PURE OAK LEATHER BELTING,
MILL SUPPLIES AND
ALL KINDS OF RUBBER GOODS.**

AGENTS:

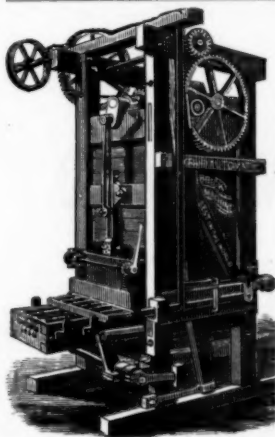
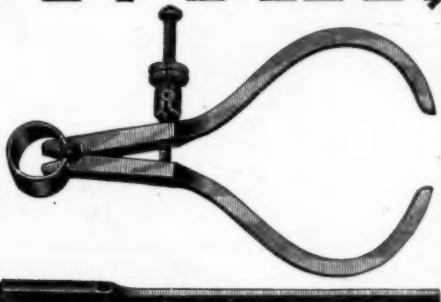
NEW YORK RUBBER CO'S BELTING, &c.

HOYT'S LEATHER BELTING.

NEW JERSEY RUBBER SHOE CO.

**CHAS. P. FAY,**

—Manufacturer of—

MACHINISTS'**Hardware Specialties****49 TAYLOR ST.,****Springfield, - Mass.****The GRAND AUTOMATIC
Brick Machine.**

Well Tempered Brick are the Most Reliable.

The Grand Automatic makes the best tempered
Brick in the world. It is the only Machine that
makes better brick in every respect than can be
made by hand. Send for catalogue to**JONATHAN CREAGER,****131 E. Front St., Cincinnati, O.****100,000 READERS!**

ESTABLISHED IN 1839.

THE

LEADING IN 1885.

The most reliable and
popular Journal of its
kind in the South. Farm-
ers everywhere endorse it.**Southern Cultivator****AND DIXIE FARMER.****ATLANTA, GEORGIA.**The Recognized Organ of Southern Agriculture and Industrial Progress of
the South. Farmers, Lawyers and Business Men Read it.**PRESS AND PEOPLE ENDORSE WHAT ADVERTISERS SAY.**"We have been astonished at the wide range from which inquiries have come to us, referring to the advertisement
of our Blue Grass Sulky Plow in THE SOUTHERN CULTIVATOR. Letters have come to us from all the Southern States,
from the Carolinas round to Texas. We could not have had a better proof of the extent of your circulation. Let us
know what your charge is to be for three months' insertion of the advertisement. How much for four months? We
shall hope to run other of our improved implements for cotton culture in your columns, if results from present 'ad.'
are as encouraging. Truly, etc., THOS. MEKLE & Co., Louisville, Ky.""CULTIVATOR PUBLISHING CO., ATLANTA, GA.—An infringement on our machine having appeared, it is necessary to
change my advertisement in the CULTIVATOR. Enclosed please find copy, which insert in place of the one now appear-
ing. I can say that I do not believe that there is an advertising medium in the South that could accomplish the same
result for its patrons in five insertions that THE CULTIVATOR will in one. With many thanks for your many kindnesses
to me, I am, very truly, GEO. T. BELTON, Gen. Agent Taylor & Cox Steam Fire Extinguisher Co., Belton, S. C."THE SOUTHERN CULTIVATOR is the oldest and now the handsomest Agricultural Journal in the South. By
recent purchases it combines "The Dixie Farmer," Atlanta, Ga.; "The Plantation," Montgomery, Ala.; "The Rural Sun,"
Nashville, Tenn.; "The Southern Farmers' Monthly," Savannah, Ga., and unites the patrons of these with its own large
list of subscribers.In club: THE SOUTHERN CULTIVATOR and "The Southern World," one year, both papers, \$1.75. Sample copies
free.**STILL ANOTHER. AS AN ADVERTISING MEDIUM.**Since the receipt of the above from Thos. Meikle & Co., we are in receipt of another under date of August 3d.
"Our advertisement in THE SOUTHERN CULTIVATOR is bearing abundant fruit, and we inclose you a letter from
Kelleyville, Texas, as a sample of the many we are receiving due to THE CULTIVATOR. As the writer of the letter is
unknown to us, and his communication unsolicited, it carries the greater weight."**AS AN EDUCATOR.**Since becoming familiar with your Magazine, we are more and more struck with its merits as an educator for the
Southern planting interest and medium of communicating with the same. We know of no Agricultural Journal that
combines so much sound scientific information with so much practical good sense. THOS. MEKLE & Co., Louisville, Ky

Sample Copies Free.

JAS. P. HARRISON, Business Manager,

Drawer 8.

ATLANTA, GA.**HOWELL'S Patent RAIN WATER CUT-OFF**HIGHEST PREMIUM AWARDED
WHEREVER EXHIBITEDRECOMMENDED BY ARCHITECTS, BUILDERS
USERS, EVERYWHERE.For turning water into or off from the cistern. The
handle, which is an iron weight, insures the bucket remain-
ing where placed and entirely prevents its being turned by
the downflow of water. The bucket or valve passes behind
the rim at the top and overlaps at the bottom, thus securing
perfect water joints at both connections. We manufacture
all sizes from 2 1/2 to 24 inches; 2 1/2 inch, \$3; 3 inch, \$5; 3 1/2
inch, \$8; 4 inch, \$9; 5 inch, \$14; 6 inch, made of 15 Tin,
\$20. These sizes are always in stock.Packed in crates of one dozen each size up to 5 inch; 5
and 6 inch in crates of 1/2 dozen each; f. o. b.; no charge
for crates. For sale by dealers all over the United States.**G. W. HOWELL, Manufacturer, COVINGTON, KY.****Attention!**

Architects and Construction Companies.

WE HAVE SPECIAL FACILITIES FOR

PHOTOGRAPHING MACHINERY,
—RAILROADS AND BRIDGES.—

We also carry in stock Photographs of

BROOKLYN BRIDGE.
NEW YORK ELEVATED R. R.
BROOKLYN ELEVATED R. R.
SUBURBAN RAPID TRANSIT CO.Showing
Construction.ALSO,
DOCKS,
STEAMERS,
PUBLIC BUILDINGS.

Estimates and catalogues furnished on application to

GEO. P. HALL & SON, Photographers,**157 Fulton Street, NEW YORK.****DIETZ, WILL & CO.****Wood-Working Machinery.****BAND SAWS, UNIVERSAL SAW
BENCH, SAW MANDRELS, PONY
PLANERS, MATCHERS.**Shafting, Pulleys and Hangers, Wood
Turning and Pattern Makers' Lathes.**186 to 191 PEARL STREET,
Cincinnati, O.****CHESAPEAKE & OHIO RAILROAD**

Leave Washington, B. & P. Station:

5.30 P. M.—Every day, Fast Express. Only solid train between Washington and Louisville
with Pullman Palace Cars. Pullman Cars to Cincinnati.**7.00 A. M.**—Every week day, Mail for principal Virginia Cities and Lexington, Ky.,
Cincinnati, Louisville and the West.**CHESAPEAKE & OHIO TICKET OFFICE IN WASHINGTON,**
513 PENNSYLVANIA AVENUE.**H. W. FULLER, GENL. PASSENGER AGENT.****C. W. SMITH, GENL. MANAGER, RICHMOND, VA.****MONON ROUTE**

Louisville, New Albany & Chicago Railway Company.

The Pullman Car
Line between **CINCINNATI, INDIANAPOLIS, CHICAGO**

AND THE NORTHWEST.

2 FAST EXPRESS TRAINS LEAVE CINCINNATI
From Station, cor. 5th and Hoadly Sts. (Central Time.)**7.30 A. M.** **CHICAGO DAY EXPRESS, (Except Sunday)**
For Indianapolis, Monon, Frankfort, Michigan City, Chicago, Milwaukee, St. Paul,
Minneapolis and all points in the Northwest.**6.45 P. M.** **CHICAGO NIGHT EXPRESS (Daily)**
For Indianapolis, Chicago, Milwaukee, St. Paul, Minneapolis, Omaha, Council
Bluffs, Davenport, Rock Island and all points in the Northwest.**PULLMAN SLEEPING CARS AND DAY COACHES THROUGH TO CHICAGO. BAGGAGE
CHECKED TO ALL POINTS IN NORTHWEST.****JOHN H. GARRISON, District Pass. Agent, 129 Vine St., Burnet House Block, CINCINNATI.****JOHN B. CARSON, General Manager, CHICAGO.****WM. N. BALDWIN, General Passenger Agent, CHICAGO.****C. H. & D. R. R.**Cincinnati, Hamilton and
Dayton Railroad.From and to **CINCINNATI.****TOLEDO, SAGINAW, DETROIT, TORONTO, AND ALL POINTS
NIAGARA FALLS, IN MICHIGAN AND CANADA.****CONNERSVILLE, RUSHVILLE, INDIANAPOLIS, PEORIA, AND ALL POINTS
BLOOMINGTON, WEST OR NORTHWEST.****RICHMOND, LOGANSPOUT, CHICAGO, MONON, AND ALL POINTS
DELPHI, IN THE NORTHWEST.****FORT WAYNE, KALAMAZOO, GRAND RAPIDS, MACKINAW, AND ALL
PETOSKEY, POINTS IN MICHIGAN.****PULLMAN PALACE SLEEPERS AND PARLOR CARS.**For information apply at any Railroad Office in the United States or Canada. In Cincinnati, Ohio, at
Offices: N. W. Corner Fifth and Vine Streets, or Depot, Fifth and Hoadly Streets, or address**J. F. MCCARTHY, Agents at
5th and Vine Sts.,
JNO. R. MCCORD, Cincinnati, O.****SAM'L STEVENSON,
General Ticket Agent**

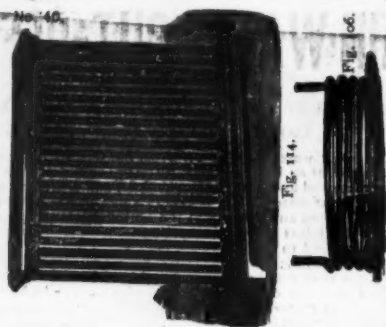


Fig. 114.

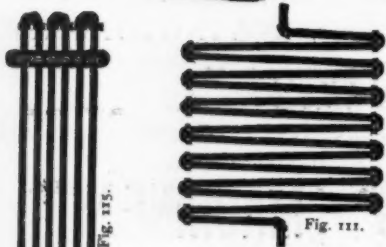


Fig. 115.

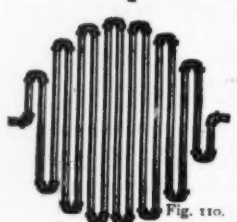


Fig. 111.



Fig. 118.

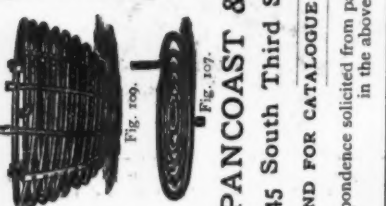


Fig. 107.

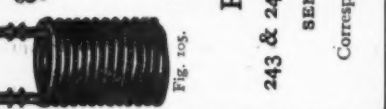


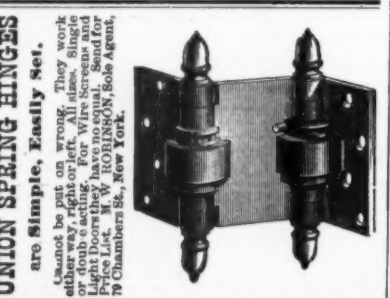
Fig. 105.

Mention this Paper when you Address us.

McShane & Bell Foundry

Fine Iron and Brass Castings Made to Order.
Manufacture those celebrated Bells for Tower Clocks, Court-Houses, Cotton Mills, Factories, &c. Prices and catalogues sent free. Address **H. McSHANE & CO.** Baltimore, Md.

Toledo Wire Works.
F. POWELL & CO.
Manufacturers of
COAL SCREENS
Wire Bank Railings,
Plant Stands, Fire Proof Lathing,
&c., Wire Bolting Cloth.
238 Summit St., TOLEDO, O.
Send for Catalogues.



UNION SPRING HINGES
are Simple, Easily Set.
Cannot be put on wrong. They work
smoothly and last long. Single
or double action. For Wire, Single
or double doors they have no equal. Send for
Price List. W. W. ROBINSON, Sole Agent,
19 Chambers St., New York.

BERNHARD DIETZ Manufacturer of Printers' Rollers,
and Roller Composition. Factory, cor. Light and
Mercer streets, Baltimore. Prices: Composition,
(bulk) 6 cents per lb.; for Casting, also, 30 cents per
lb. Orders by Mail promptly attended to.



W. J. CLARK & BRO.

Manufacturers of
Hydrants.

These Hydrants are made of the best material, and are guaranteed to be entirely non-wasting and non-freezing. The works of these Hydrants can be taken out and repaired without breaking the ground. Send for circular.

38 N. Holliday Street,
BALTIMORE, MD.

FINE
Cut Work
—A—
SPECIALTY
PRINTING
RECORD
Printing House,
Cor. Exchange Place & Commerce St.

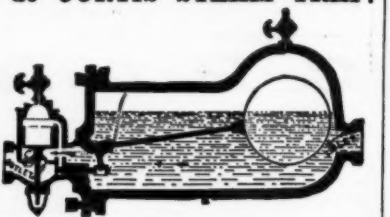
Established 1793.
H. BALDERSTON & SON,
MANUFACTURERS OF
WIRE GRATING FOR WINDOWS
Doors and Office Railing, Wire Screens for Banks, Churches and Store-Fronts. Woven Wire, Wire Tree-Guards, Sieves, Screens for Coal, Sand, &c.
66 S. Calvert Street, Baltimore.

WIRE RAILING
and Ornamental Wire Works.
DUFUR & CO. 36 N. Howard St., Baltimore.
Wire Railing for Cemeteries, Lawns, Gardens, Offices and Balconies; Window Guards, Tree Guards, Wire Cloth, Sieves, Fenders, Cages, Sand and Coal Screens, Iron Bedsteads, Chairs, &c.

The U. S. Varnish Co.
CINCINNATI, OHIO.
258 and 260 Colerain Avenue.
CHICAGO BRANCH, - - No. 47 STATE STREET.
Mention this paper.

Architectural Iron Works.
J. P. WALTON & CO.
CINCINNATI, OHIO.
Manufacturers of all kinds of IRON WORK for building purposes.—Store Fronts, Columns, Lintels, Joists, Stairs, Railing, Roof-Trusses, Doors, Shutters, etc. Jail work a specialty. Write us for catalogues.

The CURTIS STEAM TRAP.



Has main valve outside. Air valve inside.
MANUFACTURED BY
Curtis Regulator Co., 158 Beverly St., Boston.
—GENERAL AGENCIES:—
109 Liberty St., New York; No. 19 N. 7th St., Philadelphia; 86 and 88 Market St., Chicago; No. 49 Holliday St., Baltimore; No. 707 Market St., St. Louis; No. 745 Craig, Montreal.
NELSON CURTIS, Agent.



STEPHENS' VISES.

(Awarded First-Class Medal at New Orleans.)
With STEEL FACED or SOLID STEEL SLIDING JAW, and ADJUSTABLE ATTACHMENTS. Superior in Make, Grip, Strength and Durability, and more economical in Time and Labor than any other Vise. Jewelers, Machinists in general, and Car and Locomotive Builders in particular, will find them especially adapted to their need. Also STEPHENS' PATENT PLANNER CHUCKS. Sold by hardware, machinery and tool dealers. Send for descriptive circular and price-list.
MELVIN STEPHENS, Proprietor,
Office, 41 Dey St., NEW YORK.

THE BLESSING PATENT RENEWABLE SEAT.

Phosphor Bronze Stop and Check Valves.

The Renewable SEATS and DISCS are cast from the best PHOSPHOR BRONZE METAL, which has lasting qualities, double that of the best Steam Metal commonly used in first class valves.
The Seats do not have to be screwed in and out, but are simply dropped into their places, and are held in position by the bottom of the cage, which is cast on cap.
ALSO, RETURN STEAM TRAPS.
MANUFACTURED BY
The Albany Steam Trap Co.,
Office and Works,
78 and 80 CHURCH STREET,
ALBANY, N. Y.

PATENT STEEL SHAFTING
Of Superior Quality.
PULLEYS, HANGERS, COUPLINGS, &c.
PATENT SELF-OILING HANGERS,
PATENT INTERNAL CLAMP COUPLINGS,
PATENT FRICTION CLUTCHES.
A. & F. BROWN, 43 Park Place, N. Y.

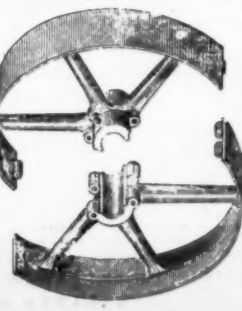
ALEXANDER NIMICK, President.
GLENDY S. GRAHAM, Secretary.
ARTHUR BRITTAN, Manag. & Treas.
NIMICK & BRITTAN MAN'FG CO.
PITTSBURGH, PA.

Builders' Fine Hardware
Patent Burglar Proof Door Locks,
KNOBS AND ESCUTCHEONS,
Padlocks and Scales.

Will mail our Large Catalogue on Receipt of 50c Postage.
CONDENSED CATALOGUE SENT FREE ON APPLICATION.

PATENT CLASP PULLEY

Made in Halves. Same Price as Whole Pulleys.
Shafting, Hangers.
Castings of Every Description Made. Stationary, Distillery, Mill and Boiler Work.
JNO. N. MARQUETTE,
No. 6 W. Falls Avenue, Baltimore, Md.





FOR STEAM HAMMERS.

For oil pumps and water packing it is unequalled.

MILLER'S CABLED PACKING—in rope form of all sizes $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1" etc. All quantities \$1.25 per lb.

It is the most substantial Packing material ever put together!

Pack with it—take none out—add a round whenever there is room for it—and on fairly well conditioned rods there is no end to its durability.

MILLER PACKING WORKS.

1338 Buttonwood Street,

Philadelphia, Pa., U.S.A.

WILL SEND SAMPLES FREE.

Wood-Working Machinery



Of the Latest and most Improved Designs for Planing Mills, Furniture and Chair Factories and Agricultural Works, Carriage and Buggy Shops, and

GENERAL WOOD WORKERS

MANUFACTURED BY

THE EGAN CO.

228 to 248 West Front St., Cincinnati, O., U.S.A.

[Improved Universal Wood Worker.] Thos. P. Egan, Pres. Ed. Ruthven, Sec. F. Danner, Supt.

ZELL'S SAFETY BOILER.

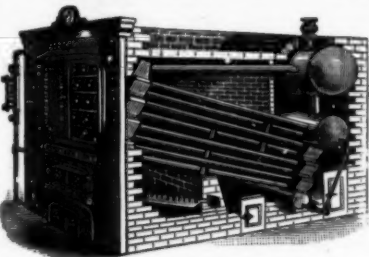
Economy

Unexcelled,

Durability

Guaranteed.

Send for Circulars.



POSITIVELY

WILL NOT

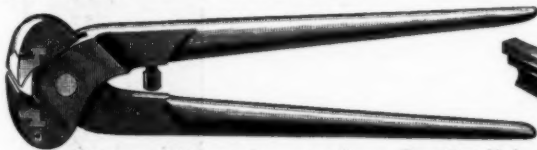
EXPLODE.

—MANUFACTURED BY—

Safety Steam Generator Com'py,

68 Warren Street, New York.

CAREW'S PATENT WIRE CUTTER.



These goods have recently been greatly improved. They are now made throughout of

FORGED STEEL

The advantage of this cutter is seen at a glance. The adjustable jaws are its main feature. These are made of the best tool steel, and are brought to a keen cutting edge before being tempered. The cutting quality is unsurpassed. Whenever they become dulled by use, they can easily be removed, by driving from the end showing price-mark, ground, and as easily replaced. This may be repeated as often as expedient; or they can be replaced by duplicate jaws, thus obviating the necessity of purchasing new cutters. Five sizes 6, 8, 10, 12 and 14 inch. If your merchant does not keep them, address

M. W. ROBINSON. Sole Agent, 79 Chambers St., N. Y.

The True Idea of Assurance.

Women's Mutual Insurance and ACCIDENT COMPANY.

OFFICERS AND
ELIZABETH B. PHELPS, Pres.
MARGARET HOLCOMBE, Vice-Pres.
EMILY TAYLOR,
Elizabeth S. Roberts, H. Louise Gates,

ALFRED K. HILLS, M. D., 466 Fifth Avenue.
JOHN A. KAMPING, Attorney and Counsel, 128 Broadway, New York.
Incorporated under the Laws of New York.

ITS OBJECT.
This company is the pioneer in throwing down the bars of unjust discrimination against women in life insurance. Statistics and common observation prove mortality to be in favor of females at every age, and married as well as single. To remove this prejudice, and to secure to women an equal estimation in her insurability, the promoters of this enterprise have devoted themselves. Consistently with this principle WOMEN AND MEN are equally insured in this company without discrimination on account of sex.

ITS MEMBERSHIP.
comprises persons between the ages of 16 and 60, of approved physical condition. The Life Class is separate and distinct from the Accident Class, members being liable for losses only occurring in the class to which they belong.

ITS PLAN.
secures insurance at cost, and embraces the best features of similar associations, with such improvements added as enlightened experience has shown to be desirable for the member's advantage and the security of the association.

ITS SAFETY AND SECURITY.
consists in its ECONOMIC system, its IMPOSSIBILITY of insolvency, and its SECURITY RESERVE FUND.



DIRECTORS:
ELIZABETH HARDENBURGH, Treas.
CORNELIA KAMPING, Actuary.
Secretary,
Charlotte Mulligan, M. F. Hoagland.

MARY PUTNAM JACOBI, M. D., 119 W. 34th Street.
DEPOSITARY OF RESERVE FUND:
BANK OF THE METROPOLIS, New York City.
FARMERS' LOAN AND TRUST CO., New York City.

FINALLY.
This company avoids complicated schemes and plans by means of which impossible results are promised. Its contracts are plain, easily fulfilled and liberal. It issues the following forms:
1. Ordinary Life Policy, \$100 to \$10,000.
2. Ordinary Accident Policy, \$5,000 death indemnity; \$25 weekly.
3. Combined Life and Accident Policy.
4. \$500 Savings Bond.

The officers would be pleased to furnish any further particulars which may be desired in relation to the Company's affairs, or the way to obtain a policy.
Agents are desired in every city, village and district throughout the healthful sections of the country.
Address all communications to the
WOMEN'S MUTUAL INSURANCE AND ACCIDENT CO.,
128 BROADWAY, NEW YORK.

Tryon Hotel,

Tryon City, Polk Co., N. C.

E. J. HARRISON, Proprietor.

This Hotel is now open for the winter, being situated in a beautiful and romantic section, where the climate is mild and bracing, enabling those in search of health or pleasure to escape the rigor of a Northern winter.

BAY STATE HOUSE,

WORCESTER, MASS.

W. L. SHEPARD, Proprietor.

This House has been thoroughly repaired and renovated, and will be KEPT STRICTLY FIRST-CLASS IN EVERY RESPECT.

The Only First-Class Hotel in the City.

Rates, \$3.00 and \$3.50 per day

Massasoit House,

SPRINGFIELD, MASS.

M. & E. S. CHAPIN, Proprietors,

Near the Union Depot.

THOROUGHLY FIRST-CLASS.

Colonnade Hotel,

Chestnut St., Cor. 15th,

One block from new Penna. Railroad Depot,

PHILADELPHIA.

H. J. & G. R. CRUMP. E. A. GILLET.



A FAVORITE RESORT
FOR ALL
SOUTHERN TRAVEL.

The Little Giant Excavator.

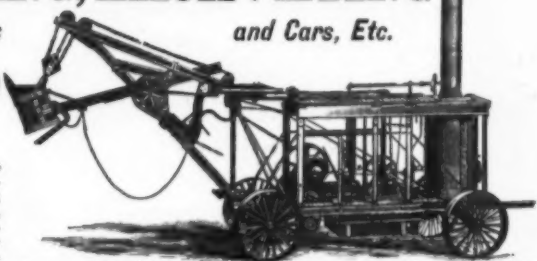
—A LONG FELT WANT SUPPLIED.—

For DITCHING, EXCAVATING

Loading Wagons

and Cars, Etc.

50 TO 100 PER CENT. SAVED
IN LABOR.



Capacity of Machine 500 to 700 cubic yards per day. Self propelling. Easily moved. Being built entirely of steel, is both strong, light and a very substantial machine. Can be used on flat-boat for dredging canals, irrigating or digging canals. Contractors and railroads promptly furnished with estimates for excavators of every description.

Address VULCAN IRON WORKS, Toledo, Ohio.

BRASS!

Roll, Sheet and Platers' Brass

GERMAN SILVER.

COPPER, BRASS AND GERMAN SILVER WIRE,

BRASS and COPPER TUBING,

BATTERY and PLATERS' SILVER, &c.

PHILIP R. VOGEL, JR.

Manufacturers' Agent

No. 79 German Street Baltimore Md.

STEEL CASTINGS

FROM 1-4 to 15,000 lbs. WEIGHT.

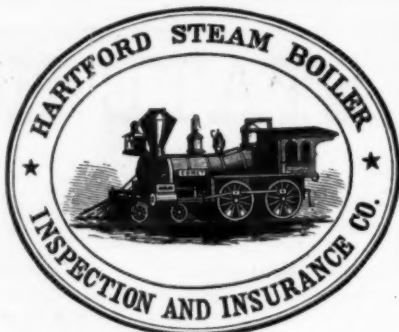
True to pattern, sound, solid, free from blow-holes, and of unequalled strength. Stronger and more durable than iron forgings in any position or for any service whatever. 40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this. CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for Circulars and Prices to

—CHESTER STEEL CASTINGS CO.—

Office, 407 Library Street, Philadelphia.

Works, Chester, Pa.

—ISSUES—
POLICIES OF INSURANCE
AFTER



A CAREFUL INSPECTION
OF THE
BOILERS,

Covering all
Loss or
Damage to

Boilers, Buildings & Machinery
ARISING FROM STEAM BOILER EXPLOSIONS.

The Business of the Company Includes All Kinds of Steam Boilers.

Full information concerning the plan of the Company's operations can be obtained at the COMPANY'S OFFICE, Hartford, Conn., or at any agency.

M. ALLEN, Prest. W. B. FRANKLIN, Vice-Prest. J. B. PIERCE, Secty.

—BOARD OF DIRECTORS—

J. M. ALLEN, President.
LUCIUS J. HENDEE, President Aetna Fire Insurance Co.
F. W. CHENEY, Asst. Treas. Cheney Bros. Silk Mfg. Co.
CHARLES M. BEACH, of Beach & Co.
DANIEL PHILLIPS, of Adams Express Co.
G. M. BARTHOLOMEW, Pres't American National Bank.
R. W. H. JARVIS, Pres't Colt's Fire Arms Mfg. Co.
THOMAS O. ENDERS, Secretary Aetna Life Insurance Co.
LEVERETT BRAINARD, of Case, Lockwood & Brainard.
GEN. WM. B. FRANKLIN, Vice-President Colt's Patent Fire Arms Manufacturing Co.
GEO. CROMPTON, Crompton Loom Works, Worcester.
WILLIAM DAMSON, of Bader, Adamson & Co., Phila.
HON. THOMAS TALBOT, Ex-Governor of Massachusetts.
NEWTON CASE, of Case, Lockwood & Brainard, Hartford.
NELSON HOLLISTER, of State Bank, Hartford.
CHAS. T. PARRY, of Baldwin Locomotive Works, Phila.
HON. H. C. ROBINSON, Attorney-at-Law, Hartford.

LAWFORD & McKIM, Agents for Maryland, 10 S. Holliday St., Baltimore, Md.

—ESTABLISHED

1774.—

FLOURING



MILLS.

BUHRS 1774.

ROLLS 1882.

This Company owns and operates three Mills, as follows:

Patapsco Mill A, Ellicott City, Md. Patapsco Mill B, Baltimore, Md.
Patapsco Mill C, Orange Grove, Md.

—Having a daily capacity of 1,500 barrels.—

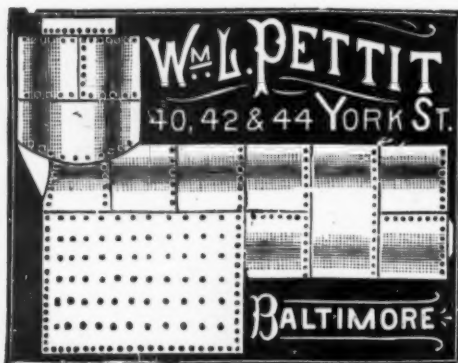
The value of Flour depends on the proportionate quantity of Gluten, Starch, Sugar and Phosphate of Lime, Maryland and Virginia Wheat, from which our Patent Roller Flours are manufactured, is unequalled for its purity and superior quality of all properties.

ASK YOUR GROCER FOR

Patapsco Superlative Patent. Patapsco Choice Patent. Patapsco Family. Cape Henry Family.
Patapsco Extra. North Point Family. Chesapeake Extra. Bedford Family. Orange Grove Extra

C. A. GAMBRILL MFG'G CO.

Office, 32 Commerce St., Baltimore, Md.



NOVELTY BOILER WORKS.

MANUFACTURER OF

HIGH AND LOW PRESSURE

Steam Boilers,

Tank and Sheet Iron Work.

Estimates furnished for New Work and Repairs.

I make a specialty of SCOTCH BOILERS, the most economical in fuel, requiring very little repairs.

Southwark Foundry & Machine Co.

430 WASHINGTON AVE., PHILADELPHIA, PA.

Porter-Allen and Southwark Engines, Blowing Engines, Gas Apparatus, Hydraulic Machinery.

Newell Universal Mill Co.

10 BARCLAY ST.

NEW YORK.



Newell's Cotton Seed Huller & Separator.

IMPROVED 1885, with AUTOMATIC FEEDER.

Capacity from 1/2 to 4 tons of Seed per hour.
Hullers for Oil Mill, Plantation and farm use.
Mills for grinding Bone, Clay and Cotton Seed.

Send for cuts and prices. Write for testimonials.

THE BERRYMAN Patent Feed Water Heater and Purifier

The Shells of the Berryman are of C H No. 1 iron, and tested to 175 pounds cold water. Every heater is guaranteed to be absolutely tight, making it the only Feed Water Heater applicable to a Condensing Engine, increasing the vacuum and imparting a high degree of heat in the feed water, saving eight to ten per cent.

THE BERRYMAN

has been in constant use for more than 12 years in all parts of the United States and Europe, and none have ever needed repairs. It gives the highest result attainable by the use of exhaust steam.

Boiler repairs, and the vexation by shutting down when in a hurry, are saved. The trouble and expense of throwing out a poor heater and putting in a good one are saved by the use of THE BERRYMAN FEED WATER HEATER AND PURIFIER.

All Oil or Fatty Matter is excluded from the boilers, as the feed water and exhaust steam do not come in contact by the use of THE BERRYMAN FEED WATER HEATER AND PURIFIER.

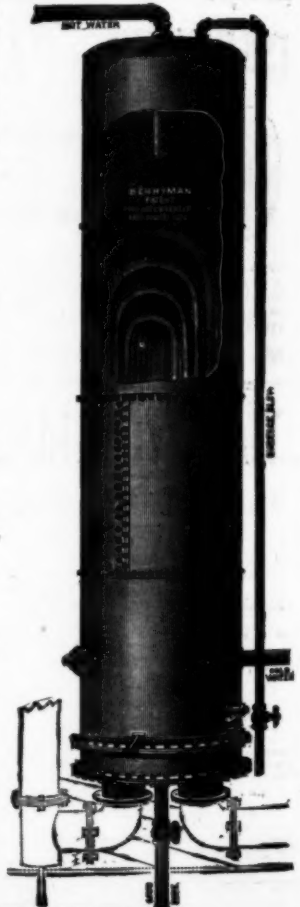
I. B. DAVIS & SON,

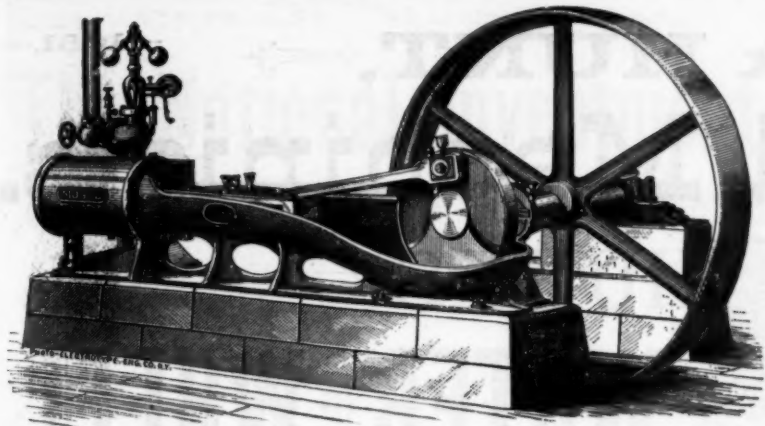
Sole Proprietors & Manufacturers in the U. S.

Office & Works, HARTFORD, CONN.

Philadelphia Office, 125 North 4th St., JAS. BERRYMAN, Manager.

R. M. DeARAZARENA, Agent, No. 811 North Second St., ST. LOUIS, MO.





THE "MOGUL" ENGINE.

(NEW DESIGN.)

Bearings Extra Large, Compact, Simple, Strong, Durable, and of Superior Workmanship and Materials.

BUILT BY

MERWIN MCKAIG, - - - Cumberland, Md.

Also Manufacturer of Boilers, Pulleys, Shafting, &c. Send for catalogue.

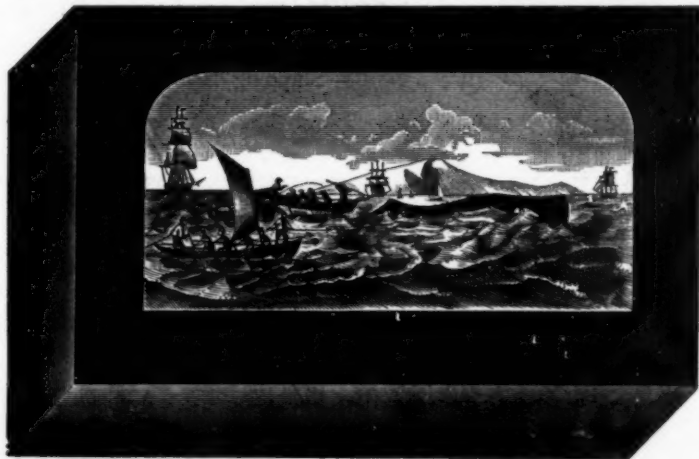
The Oldest Oil House in the City. Business Established 1832 (on Present Premises.)

WM. C. ROBINSON & SON,

81 SOUTH ST., BALTIMORE, MD.

Manufacturers and
Wholesale Dealers in

OILS!

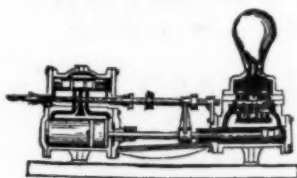


Specialties—Oils for Cotton and Woolen Mills, Railroads, Tanners' and Machinery Use.

Our Colophine Cylinder Oil is the best in use, 650° fire test, 28° gravity. Perfect Engine Oil 600° fire test, 20° gravity. Colophine Engine Oil 550° fire test, 23° gravity. Agent for Downer's Spindle, Champion and Mineral Spinn, Meriam & Morgan's Paraffine Co's Paraffine, William's Odorless Lubriphene Oils. Also Manufacturers' Agent for 25°, 28° and 30° Paraffine, and 31° Neutral Bloomless Oils. Correspondence solicited.



THE BURTON



Steam Pumps

Are the BEST because they are the Most Durable and are Guaranteed to be

Perfectly Reliable.

RUN FOR YEARS WITHOUT REPAIRS AS TESTIMONIALS WILL SHOW.

Write to C. H. BURTON, Cleveland, O., for circulars, etc.

Advertise in the Manufacturers' Record.

Queen City Printing Ink Co.

CINCINNATI, OHIO.

WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE
THE INK QUEEN CITY PRINTING INK CO
CINCINNATI, O.

MANUFACTURERS OF ALL DESCRIPTIONS OF

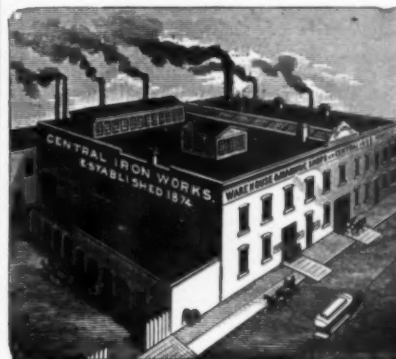
INKS!

Varnishes and Sizes

FOR PRINTERS' USE.

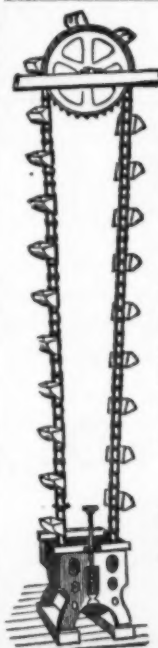
New York Office, . . . 194 William Street.

Philadelphia Office, . . 434 Walnut Street.



GEO. J. FRITZ,
PATENTEE AND BUILDER.
STEAM ENGINES AND BOILERS,
ELECTRIC LIGHT ENGINES,
DOCTORS, PUMPS, COTTON SEED
HULLERS, MEAL MOULDERS,
BARREL TRUSSERS, STAVE PLAN-
ERS, CROZING AND CHAMFERING
MACHINES, STAVE AND HEADING
JOINTERS, CHILLFACE CRUSHER
ROLLS, MILL GEARING, SHAFTING,
PULLEYS AND HANGERS.
MILLERS' ROLLS REGROUND AND CORRUGATED
2022 to 2028 S. 3^d ST. ST. LOUIS, MO.
SEND FOR DESCRIPTIVE PRICE LISTS.

MENTION THIS PAPER WHEN YOU WRITE.



ANTI-FRICTION

Roller Detachable Chain Belting.

Especially adapted for the rapid and economical handling of CLAY, TILE, LIME, PLASTER, CEMENTS, BROKEN STONE, COAL, ORES, SAND, DRY and WET TAN, SAW DUST, SLABS, PULP, GRAIN, FLOUR, ICE, &c., &c., &c. For ELEVATORS, CARRIERS, CONVEYERS, &c., &c. Propelling STEAM BOATS and for other DRIVING PURPOSES.

MANUFACTURED AND SOLD BY THE

Roller Chain Belting Co.

COLUMBUS, OHIO.

Send for Illustrated Catalogue.

ESTABLISHED

POOLE & HUNT,

—1851—

Founders and Machinists.

POOLE & HUNT'S LEFFEL * TURBINE * WATER * WHEEL,

Prices as Low as any

other First-Class Wheel.

Machine * Moulded *

MILL GEARING.

Our plant for the production of MACHINE-MOULDED MILL GEARING is unequalled in the country, and we are prepared to fill orders with dispatch and at GREAT SAVING IN COST OF PATTERNS.



Shafting, Pulleys, HANGERS, PEDESTALS.

SHAFTING, PULLEYS, HANGERS and COUPLINGS, of latest and most approved designs.

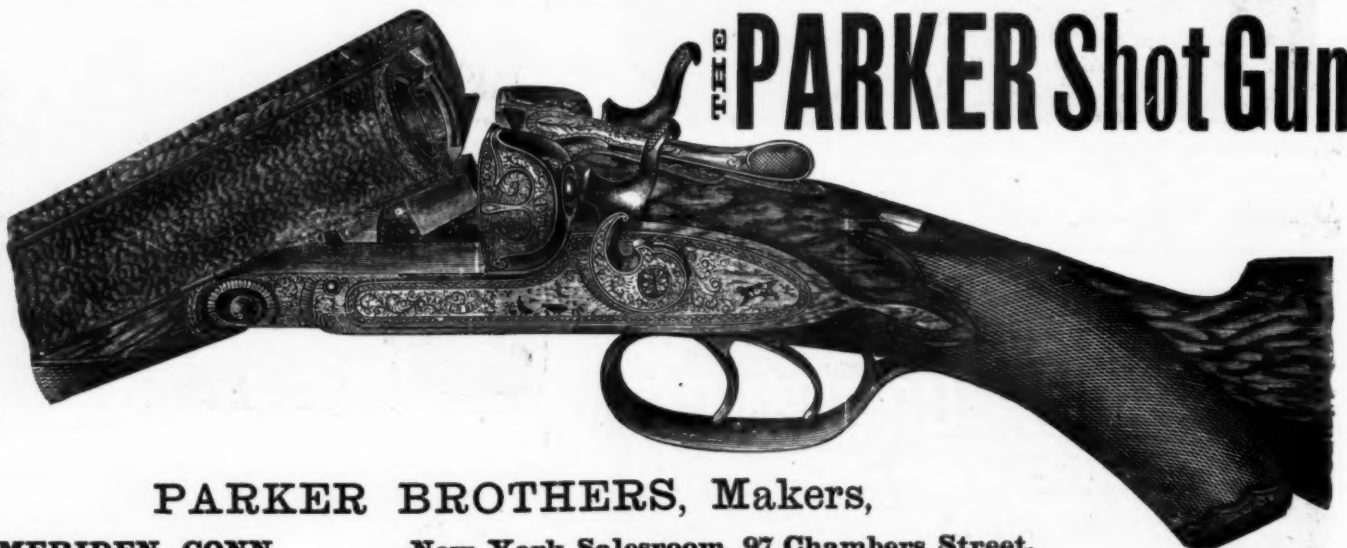
N. B.—Shipping facilities the best in all directions.

Send for Pamphlet. Send for Price-List.

List of our Gear-
ing Mailed on
Application.

POOLE & HUNT, BALTIMORE, MD.

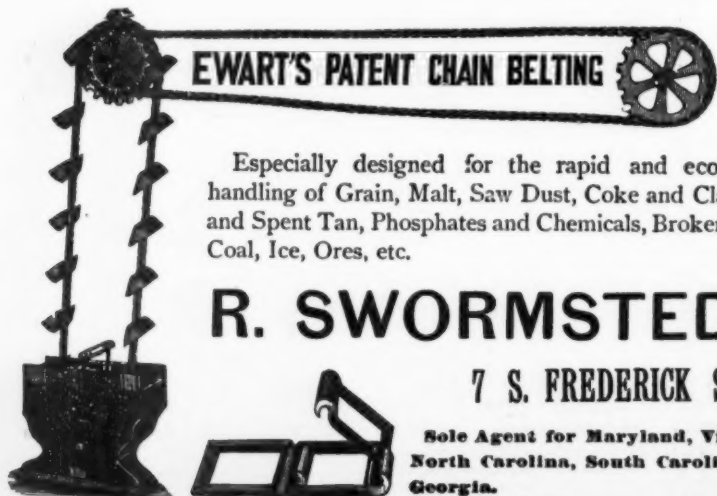
Report of the International Gun Trial, held at Bergen Point, N. J., April 3, 1884. Extract from *Turf, Field and Farm* reporting the same: "The Parker Gun, our prominent home manufacture, won the admiration of all by its fine shooting qualities. It registered in both the 10 and 12-bore classes; the greatest number of pellets in the 30-inch circle, and therefore must be awarded the palm for pattern."



PARKER BROTHERS, Makers,

MERIDEN, CONN.

New York Salesroom, 97 Chambers Street.



EWART'S PATENT CHAIN BELTING

Especially designed for the rapid and economical handling of Grain, Malt, Saw Dust, Coke and Clay, Dry and Spent Tan, Phosphates and Chemicals, Broken Stone, Coal, Ice, Ores, etc.

R. SWORMSTEDT,

7 S. FREDERICK ST.

Sole Agent for Maryland, Virginia,
North Carolina, South Carolina and
Georgia.

Send for Illustrated Catalogue

Please mention this paper.

F. W. BRUCH,

M. D. LUEHRS,

C. GREVE.

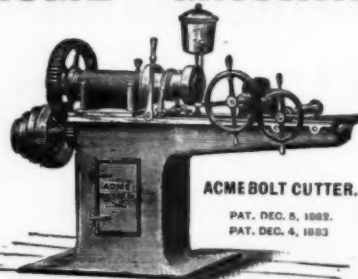
ACME MACHINERY COMPANY,

MANUFACTURERS OF

BOLT AND NUT MACHINERY,

Office and Factory,

COR. BELDEN & HAMILTON STS.
CLEVELAND, OHIO.



ACME BOLT CUTTER.

PAT. DEC. 8, 1882.
PAT. DEC. 4, 1883

DO YOU USE STOVE REPAIRS?

Having a Stock of Repairs for over 12,000 different Stoves, can we not make it to your advantage to trade with us?

PROMPT SHIPMENTS AND SATISFACTION GUARANTEED.

The W. C. Metzner Stove Repair Co.

125 & 127 W. Randolph Street, - - CHICAGO.
CATALOGUE SENT FREE.

GEO. B. WELCH, President, Washington, D. C.

GEO. A. DELEREE, Vice-President, New York City.

FRED. BALCOM, Treasurer and General Manager, New York City.

J. H. LINDLEY, Secretary, Washington, D. C.

The National Investment and Development Company,

701 9th Street, N. W., Washington, D. C., and 234 Broadway, New York City.

Contractors and Builders of Gas and Water Works for small cities, Ice Factories and Cold Storage Houses, on the most approved systems now in use. Capital and machinery furnished for any satisfactory manufacturing business. Stock companies organized and their Bonds and Stock put on the market. This company will only invest in enterprises that meet the approval and investment of local capital. We invite correspondence with those who wish to establish Cotton Seed Oil Mills, Cotton Gins, Ice Factories, Brick Machinery on clay beds, Fertilizer Works, &c., &c. We also build houses on the Installment Plan, taking a mortgage on same for 80 per cent. of the purchase price. *No Patents Purchased.* Our business is to develop enterprises needing assistance and experience to meet the demands of trade. For particulars apply to

FRED. BALCOM, General Manager,

No. 234 BROADWAY, NEW YORK.

THE VENDOME.

The Greatest Triumph in
Hotel Enterprises.

*Its Elegance, Spacious-
ness, Sanitary Excellences,
Unequalled Location, Fine
Surroundings and Views,
make it*

The Most Desirable Hotel
in the Country,

ESPECIALLY FOR

The Summer Traveller.



COMMONWEALTH AVENUE, Showing the Brattle-square Church and the Vendome.

BOSTON'S
New Palatial Hotel
W. TRACY EUSTIS,
Manager.

The VENDOME is at the corner of Commonwealth Avenue and Dartmouth Street, extending 240 feet on the former and 125 feet on the latter. Commonwealth Avenue, on which the Vendome has its main front, is perhaps the finest boulevard in America. It is 210 feet wide; through its centre is a strip of improved park land 100 feet wide; and along its sides are hundreds of well-constructed and architecturally beautiful residences. Look up or down Commonwealth Avenue by day, when the stately lines of buildings and the several rows of trees can be seen for a distance of a mile or more, or by night, when the avenue is lighted by four continuous rows of gas lamps throughout its length, and you will see one of the most attractive thoroughfares either in this country or in Europe.

E. C. HUXLEY, Pres.

T. L. STURTEVANT, Treas.

THE STURTEVANT MILL.

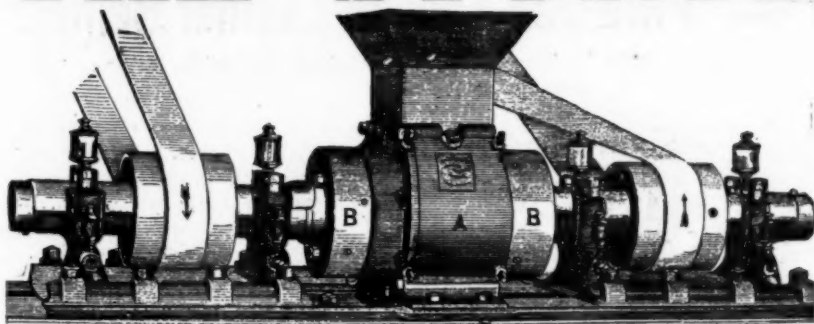
ROCK CRUSHER

—AND—

PULVERIZER COMBINED.

FOR GRINDING AND CRUSHING

~Cores, Phosphates, and Other Hard Substances.~



of this invention, as it is the first mill ever constructed where the rock is made to grind itself. The expense of wear and tear is 75 per cent. less than any machine ever invented. No expensive foundations. No skilled labor required. One mill equal to a 30-stamp battery and crushers combined, occupies space of 12 feet by 4 feet in width. These machines are in operation on a large scale. Every mill warranted to do all claimed for it. Send for catalogues of this wonderful machine, and full information.

FRASER & CHALMERS, Sole Manufacturers,

45 Fulton Street, Chicago.

2 Wall Street, New York.

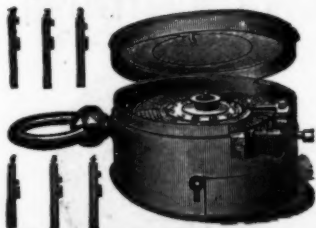
11 Calle de Juarez, Chihuahua, Mexico.

423 Blake Street, Denver.

STURTEVANT MILL CO., 89 MASON BUILDING, BOSTON, MASS.

Buerk's Watchman's Time Detector.

—IMPORTANT FOR ALL LARGE CORPORATIONS AND MANUFACTURING CONCERNS.—



Capable of controlling with the utmost accuracy the motion of a watchman or patrolman as the same reaches different stations of his beat. The instrument is complete in itself, portable, and as reliable as the best lever watch. It requires no fixture or wires communicating from room to room, as is the case with ordinary watch clocks.

The Instrument will in all Cases be Warranted Perfect and Satisfactory.

P. O. Box 2470.

J. E. BUERK, Proprietor, No. 230 Washington St., BOSTON, MASS.

STEAM PUMPS

SEND FOR PRICES.

VALLEY MACHINE CO. EASTHAMPTON, MASS.

Steam Engines.
AUTOMATIC AND
PLAIN SLIDE VALVE.
Stationary, Portable and
Traction. Cheapest
and best for all purposes.
Simple strong and durable.
No Vapour boiler
ever exploded. Saw Mills,
Threshing Machines and
Agricultural implements
and machinery generally.
Send for list of Catalogue
A. B. FURQUAN,
York, Pa.



Pennsylvania Agricultural Works, York, Pa.
Farguhar's Standard Engines & Saw Mills.
Send for Illustrated
Catalogue.

Address A. B. FARGUHAR, York, Pa.

GEO. V. CRESSON,

PHILADELPHIA

Shafting * Works,

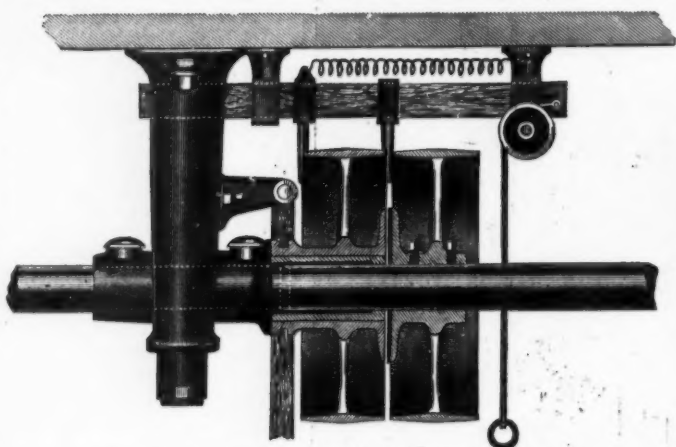
18th and Hamilton Streets, Philadelphia, Pa.

—MANUFACTURER OF—

SHAFTING,

And all the Appurtenances used in the
TRANSMISSION OF STEAM POWER.

ECONOMY, DURABILITY, SAFETY.



AVOID ANNOYANCE OF RUNNING
LOOSE PULLEYS.

PATENT ADJUSTABLE
LOOSE PULLEY ARRANGEMENT.

ROBT. WETHERILL & CO.

CHESTER, PA.

ESTABLISHED 1872.

Corliss Engine

—BUILDERS—

Condensing, Non-Condensing,
Compound.
Great Economy, Durability,
Close Regulation.

BOILERS,
Shafting and Gearing.

CORLISS PUMPING ENGINES

—CITY WATER WORKS—

Chapman Valve Mfg. Co.

—MANUFACTURERS OF—

STEAM, GAS and WATER

VALVES and GATES

FIRE HYDRANTS.

WITH OR WITHOUT INDEPENDENT VALVES.

General Office and Works, INDIAN ORCHARD, MASS.

Treasurer's Office,

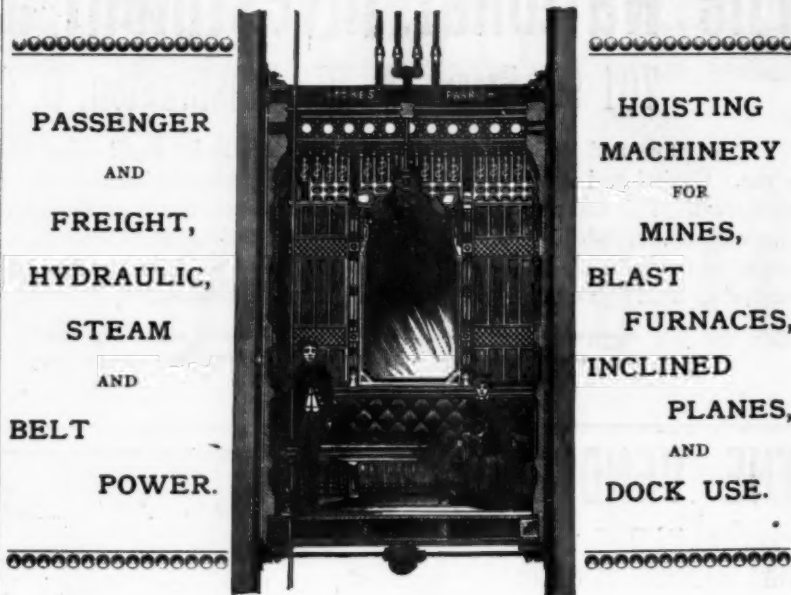
Mason Building, 72 Kilby and 112 Milk Sts., Boston.

—ALL WORK GUARANTEED.—

Send for Descriptive Circulars and Price-List. Correspondence Solicited.



Stokes & Parrish Machine Co.



PASSENGER
AND
FREIGHT,
HYDRAULIC,
STEAM
AND
BELT
POWER.

HOISTING
MACHINERY
FOR
MINES,
BLAST
FURNACES,
INCLINED
PLANES,
AND
DOCK USE.

ELEVATORS.

SAFETY, SPEED AND ECONOMY.

WORKS AND OFFICE:

30th and Chestnut Sts.,
PHILADELPHIA.

BRANCH OFFICE:

95 & 97 Liberty Street,
NEW YORK.

THOMAS K. CAREY & CO.

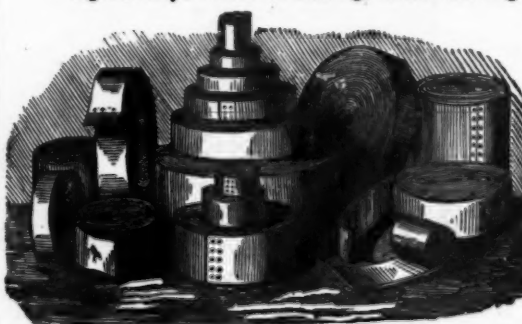
25 S. Charles Street, BALTIMORE, MD.

Pure Oak Tanned Leather Belting

Agents Hoyt's Leather Belting, Boston Belting Co's Rubber Belting.

DEALERS IN

Lace, Picker and Belt Leather,
Roller Skins, Roller, Clearer and
Slasher, Cloths, Ring Travelers,
Bobbins, Shuttles, Cotton Belt, Ele-
vator Buckets, Spiral Conveyers,
and Mill Goods of all kinds.—
Rubber Hose, Gaskets, Valves,
Deckle Straps, Pure Gum, Cloth
Insertion, and Rubber-Back Pack-
ing, Tubing, Cotton and Linen
Hose, Springs, and Mechanical
Rubber Goods of every Description.



W. J. CHAPMAN, Direct Shipper Special attention given to orders from found-
ers and machinists.
COAL AND Connellsville Coke. Office, York and
William Sts.

BUFFALO CUPOLA and FORGE BLOWERS,

PORTABLE FORGES,

Blacksmiths' Hand Blowers,

STATIONARY BLAST FORGES,

HEATING AND ANNEALING FURNACES.

Buffalo Forge Co.

—490 BROADWAY, BUFFALO, N. Y.—

